



MANUFACTURERS' RECORD

A WEEKLY SOUTHERN INDUSTRIAL, RAILROAD AND FINANCIAL NEWSPAPER

VOL. XLIX. No. 23
WEEKLY.

BALTIMORE, JUNE 21, 1906.

\$4.00 A YEAR.
SINGLE COPIES, 10 CENTS.

Manufacturers' Record.

PUBLISHED EVERY THURSDAY BY THE
MANUFACTURERS' RECORD PUBLISHING CO.
BALTIMORE.

RICHARD H. EDMONDS, President.
THOMAS P. GRASTY, Vice-President.
FRANK GOULD, Secretary.
VICTOR H. POWER, Treasurer.

RICHARD H. EDMONDS,
Editor and General Manager.

THOMAS P. GRASTY,
General Staff Correspondent.

Branch Offices:

New York—52 Broadway.
Boston—170 Summer Street.
Chicago—505 Fisher Building.

Charleston, W. Va.—ALBERT PHENIS,
Special Correspondent for West Virginia,
Kentucky and Southwest Virginia.

Subscription, - - - - - \$4 a year
(payable in advance) to United States,
Canada, Mexico, Cuba, Porto Rico, Hawaii
and the Philippines.
To Foreign Countries in the Postal Union,
\$6.50 a year.

[Entered at the Baltimore Postoffice as sec-
ond-class matter.]

BALTIMORE, JUNE 21, 1906.

BREADSTUFFS AT SOUTHERN PORTS.

The fiscal year ending June 30 promises to make a gratifying exhibit of the increase in exports of breadstuffs from Southern ports. Comparison of 11 months of this year with the corresponding period of last year for six leading Southern ports is as follows:

Ports.	1905.	1906.
Baltimore.....	\$9,089,568	\$24,080,941
Newport News.....	4,119,499	9,532,048
Norfolk and Portsmouth.....	747,179	1,831,416
Galveston.....	2,916,774	11,167,779
Mobile.....	2,385,836	2,700,384
New Orleans.....	10,495,902	17,326,177
Total.....	\$29,754,758	\$66,638,745
All ports.....	94,857,576	170,022,548

At the ports outside the South the increase in the 11 months was from \$65,102,818 to \$103,383,803, equal to \$38,280,985, or something less than 59 per cent., while at the six Southern ports the increase was from \$29,754,758 to \$66,638,745, equal to \$36,883,987, or a little less than 124 per cent.

SAFETY IN BANKING.

In an interesting speech this week before the North Carolina Bankers' Association at its annual convention at Lake Toxaway, President C. N. Evans, cashier of the Southern National Bank at Wilmington, gave a comprehensive review of recent material progress in North Carolina, and, dwelling upon its financial institutions, showed that in the past five years the national banks had increased in capital from \$3,172,050 to \$4,270,000, in surplus and profits from \$1,605,334 to \$2,667,673.27, in deposits from \$9,745,116.28 to \$20,080,800.58, in loans from \$10,243,277.37 to \$19,422,528.40, and in total assets from \$17,075,273.23 to \$31,712,590.17, and that State

banks, savings banks and loan and trust companies had increased in capital from \$3,063,598.17 to \$6,056,800.86, in surplus and profits from \$1,119,097.76 to \$2,420,726.93, in deposits from \$10,544,955.80 to \$32,065,799.85, in loans from \$10,923,167.32 to \$28,928,770.87, and in total assets from \$15,857,939.42 to \$43,380,000.52. While recognizing in the wonderful increase in banking resources thus shown a true index to the material progress of South Carolina, Mr. Evans urged the utmost conservatism in periods of prosperity in the management of financial institutions. He said:

The disposition to organize banks of insufficient capital and place them, in many instances, in the care of inexperienced officers must inevitably result in confusion, if not in actual loss.

That is a wise suggestion which cannot be too strongly emphasized throughout the South, where unparalleled inducements for the starting of banks have been given in the prosperity of the past two or three years. Nothing is calculated to check that prosperity more readily than a weakening of the South's financial standing, and such a weakening would be most readily promoted through any large number of banks falling into incompetent hands. Something more than ready capital and native honesty is needed in the equipment of a successful banker. Honesty may make mistakes in judgment resulting in wiping out the capital and in bringing distress to patrons of the bank. Because one bank is successful in a community is no reason in itself why two or three or four would succeed there, and it is not impossible that in competition in a limited field risks may be taken not only involving in loss the immediate field, but affecting a much wider territory. President Evans did well to utter his warning, coupled with the advice that it is safer to increase capital in banks already operating than to organize new institutions.

Advertisements of Southern localities offering special advantages for the location of manufacturing enterprises will be found on pages 68, 69 and 70.

NOT FOR THE SOUTH.

Half a dozen Southerners probably regretted that they had given the least countenance to the so-called "Southern States Immigration Commission" of New York when they read the dispatch from Washington stating that a representative of the "commission" was in a delegation which called upon the President, Immigration Commissioner Sargent and Speaker Cannon last Saturday to protest against certain features of the immigration bill as likely to operate to the exclusion of "a desirable class of Russian and Polish Jews and interfere with the movement for their colonization in the Southern States." The South needs immigration, but there are some kinds of immigration which will not benefit it. It has welcomed and has rightly honored many Jews, but it recog-

nizes a difference between the enterprising, honored Jews who have been among the leaders in American advancement and the Russian and Polish Jews now flocking to this country. In spite of the natural sympathy of one human being for another, it sees in this class of Russian and Polish Jews anything but a desirable class of immigrants, and, consequently, will welcome any legislation calculated to interfere with the movement for their colonization in the South, and should make it distinctly understood that any New York agency essaying to further the movement is not representative in any way of the South.

ACTIVITY IN GERMANY'S COAL AND IRON TRADE.

It is not alone in the United States that there is a shortage in the labor supply. The Dusseldorf correspondent of the *Iron and Coal Trades Review* of London, reviewing the condition of the German coal market, says: "The situation in the coal trade of the Ruhr is becoming critical, having regard to the large demand for all classes of coal and the impossibility of meeting it." During January, February and March there was a large decrease in the output, notwithstanding this increasing demand, due, according to the coal operators, to a reduced output on the part of the miners and to the scarcity of labor by reason of the migration of many of the men to other industries, including iron and steel work and building operations, where high wages are now being offered. There is also a continued shortage of cars, and to overcome this in part the railroad authorities have announced that they would suspend the Sunday rest until further notice for the purpose of doing what we in this country would call "breaking the car blockade," but which the correspondent expresses as "facilitating the circulation of the wagons." The two leading shipping companies and the Coal Syndicate, in order to meet these conditions, have been compelled to order 130,000 tons of coal from Great Britain. The same correspondent reports that in pig-iron and semifinished steel business is very satisfactory, with stocks very scarce, stating that "all reports agree as to the works being strained to the limit of their capacity with a view to cope with the demand." Under these circumstances the price of Westphalian and Siegerland forge pig was increased from 65s. to 68s., basic pig from 68s. 6d. to from 72s. 6d. to 73s., and Luxemburg forge pig from 53s. 7d. to from 56s. 10d. to 57s. 7d.

BLOW AT SOUTHERN AGITATORS.

Driving especially at the South, the so-called "National Child Labor Committee" of New York city is circularizing Southerners for funds "needed for investigation, publicity and publication, legislative campaigns, etc.," the etc. probably embracing the most important item, the salaries involved in the agitation. The circular says that "the literature sent from time to time to our mem-

bers will keep you in touch with a social problem of the first magnitude in our national life." The value of the literature to anybody desiring a safe stock of information as a basis for intelligent action is indicated by a specimen also being circulated, and containing the following:

The co-operation of all patriotic and humane Southerners is invited, that a stop may be put to this hideous abuse of childhood, which is worse in the South, in comparison with the number employed, than any part of the civilized world.

Some Southerners of honest intent have lent their names to the New York undertaking, under whose auspices such stuff is circulated, and on the strength of that other Southerners are expected to contribute anywhere from \$2 to \$25 a year to increase its circulation, "etc." It is hardly worth while to give it serious attention, except for the purpose of emphasizing by contrast the value of a study of the social side of the Southern cotton mills situation when made by a trained observer, capable of recognizing facts and of expressing accurately impressions involving some comprehension of all phases of a situation. This seems to be the case with Miss Gertrude Beeks, secretary of the welfare department of the "National Civic Federation" of New York. She has been on a visit to Georgia, South Carolina and Alabama, where she has seen the working of 18 cotton mills and has visited many of the cotton villages. In an interview in the New York *Sun* she is quoted as follows:

Conditions in these places are much better than I expected to find them, and everywhere I have met the most cordial co-operation and anxiety to do the best that can be accomplished.

I found these mills in the South generally well lighted and ventilated, heated in the winter and cooled in the summer. Generally the employers have been quick to utilize modern inventions, such as exhaust systems for the removal of the lint, and cold-water sprays instead of the hot-water sprays in the summer to humidify the atmosphere for manufacturing purposes, and the blower system for heating in the winter and cooling the air in the summer.

Some of the most progressive of these men have cold water sprayed on the roofs or the sides of the mills exposed to the sun in exceedingly warm weather, and in one there is even ice placed in the chamber through which the fresh air is drawn into the mill. Therefore the statement that the operatives are more comfortable in the summer in the mills than they were when engaged in the hot sun on the farms is justifiable.

In spite of the sensational literature that is flooding the country at this time in one form or another, much of it garbled, a great deal of it written and foisted on the public for purposes of trade, I have found the employer in nearly every case a most humane man. He is often neglectful and indifferent, his brain filled with commercial problems, and he does not think always outside of that groove.

When he sees the advantages not only from a humane standpoint, but financial as well, in improving the condition of his people, he is eager to do as others have done before him, and in many instances to go a step further. He has a respect for facts in place of theories, and my experience of 10 years has taught me never to seek to interest him until I can give him what he wants, until I can show how theory has culminated in reality and hand him the proof.

Through the humane instincts of the mill-

owners educational opportunities have been secured to the children. Kindergartens and schools are supported in whole or in part by all the operators. The public-school system in the South is still in an imperfect condition, and, furthermore, appropriations are insufficient to maintain the schools longer than four months in the year.

Where the cotton-mill village is an unincorporated town the employer supports the kindergartens and schools entirely for eight months in the year. In one village, where the population is 5000, there are 2200 operatives and 750 children being educated at the present time by the millowner.

In other villages the millowners pay the greater amount of taxes to support the schools for the regular term of four months, and then, in addition, maintain them entirely at their own expense for an additional four months. The employers erect the buildings in the majority of the villages, as well as the homes for the teachers.

For the children who work in the mills there are night classes in arithmetic, reading and writing. Frequently half of the children will go to school for a period and then alternate with the other half later on in working the mills. There are libraries supplied by the employers and churches, toward the support of which they contribute entirely or in part.

In some of the villages special provision, either in separate schools or by other arrangement, is made for the dinner toters. The dinner toters are children who take lunches to the mills to their fathers, and perhaps mothers, too.

They are excused from school at 11, when they go home, get the lunch, take it to the parent and return home for their own mid-day meal. They are very responsible little people, and the view of a hundred or so of little tots, each weighted with a big straw basket, is one of the most interesting to be seen in a cotton village.

In order to provide recreation for the employees there are social halls or auditoriums on the top floors of the schoolhouses, theaters, roller-skating rinks, athletic fields, picnic grounds, swimming pools, gymnasiums, bowling alleys, armories for the military company of the employees, and meeting places for the various lodges.

The homes are rented by the employers to the employees at from \$2 to \$5 a month for a house of four to eight rooms. These rentals offer no return on the investment, but maintain the cost of repairs and improvements. The moral tone of many of the villages has been greatly improved by lighting the streets with electricity.

In some instances the interiors of the employees' homes are thus illuminated. In some of the houses even simple bathrooms with zinc tubs have been introduced. There are garden plots with prizes for vegetables and flowers. Some of the villages are exceedingly beautiful, both as to the artistic appearance of the buildings and the landscape effects.

Miss Beeks has simply narrated facts familiar to every careful student of the South. As they are considered the horror of them grows.

What a "hideous abuse of childhood" is the support, in whole or in part, of kindergartens and schools in the Southern mill villages by the mill managements, their arranging of night classes for children who work in the mills and their making special provision for the children who are dinner toters! What else but "hideous abuse of childhood" could be expected of men who actually dare to provide for the comfort of their employees in the mills and in their homes and for their recreation in social halls, athletic fields, picnic grounds, etc.! The bloody villains! Millions of dollars should be immediately contributed in blocks of \$2 or \$25 to drive them off the face of the earth, and having thus removed the opportunity for thousands of Southern whites to make a decent living by honest toil, to be educated and to advance to better things, other millions should be contributed to support the ex-operatives who will have nothing else to do except to draw salaries as the agents of some New York agitation against the South. For there will be some such agitation, upon one specious pretext or another, as long as one sane and self-respecting Southerner survives to be "reformed."

BONDS AND THE GOLD OUTPUT.

In discussing some phases of the business development of the South before the Virginia bankers at Old Point last week the editor of the *MANUFACTURERS' RECORD*, touching upon the amazing production of gold, said:

We have entered upon a period of world-wide expansion in trade and industry such as man never saw before.

The Orient, with its 700,000,000 or 800,000,000 people, under the lead of Japan is adopting Western methods of an industrial civilization based on the railroad, the factory and labor-saving machinery. Africa, a continent whose gold mines are doubtless indicative of its other natural resources, is taking its place in the new order of things, and soon may become to Europe what America was for several centuries after the settlement of Jamestown—a vast field for exploitation and enrichment. South America, whose resources are as vast as its territory, is undergoing a great development—a development, in fact, which in some respects even surpasses our own. Canada and Mexico in the rapidity of their growth are rivaling the United States, while nearly all Europe is enjoying an expansion in manufactures and commerce. It is, indeed, a golden era upon which we have entered, for the world's gold production is commensurate with this expansion of industry. Or shall I say this expansion is commensurate with gold production? From 1492 to 1892, 400 years, the world's gold output was about \$8,000,000,000. Since 1892 the total has been about \$3,500,000,000, and the world's production is now at the rate of over \$350,000,000 a year, with a fair prospect of its reaching within the next few years \$500,000,000. It is quite probable that the output of the 25-year period between 1892 and 1917 will exceed the total of the 400 years from 1492 to 1892. During the first half of the nineteenth century the total production of gold was \$787,000,000, while during the second half it amounted to \$6,900,000,000. The stimulating effect of this huge increase in gold production will doubtless be seen in an outburst of industrial activity throughout the world. It would, indeed, seem that Europe, Asia and Africa, as well as the American Continent, are all at the threshold of a period of advancement in material affairs, and necessarily of a higher range of prices and of an advance in wages such as mankind has never known.

This increasing output of gold, to which the *MANUFACTURERS' RECORD* has often called attention during the last year or two, is bringing up many interesting problems in the world of finance. Its bearing upon security values is discussed in *Moody's Magazine* for June, which says:

Very few men, even amongst our bankers and bond brokers, appreciate the great loss in bond value during the last few years. Still fewer understand the one great fundamental cause for this change.

Seven years ago British consols, "the investment index of the world," were selling at 114; today they are below 89. Since 1896 24 high-class British colonial government bonds have declined an average of 12 points. Since 1901 a dozen of the most stable railroad bonds in the United States lost 8 per cent. of their value, or on an average of 1½ per cent. a year. The decline in the last year—right in the face of the increased earnings and rising prices of stocks—was more than 2 per cent., according to *Moody's Magazine* for June. The *Wall Street Journal* of April 26 printed a list of over 30 railroad and industrial bonds that showed an average decline of 2 per cent. in six months. Our own 4 per cent. government bonds of 1925 have lost 10 per cent. in five years, and would probably have shrunk more were they not used as a basis for our note circulation. A similar shrinkage has taken place in the government bonds of Germany, France and Holland. Russian bonds, of course, have lost much more—about 15 per cent. during the last year.

Except for the Boer and Russo-Japanese wars, which account for much of the decline in British and Russian bonds, there is only one great cause of this universal shrinkage in bond values. This is the declining value of gold, the measure of all values in all civilized countries. The output and supply of gold is increasing more rapidly than is the output and supply of the things measured by gold. Hence a specific amount of gold will not now exchange for as much of other commodities as it did last year or five or ten years ago. That is, gold is losing its purchasing power. Or, as we usually say, "average prices are rising." According to Dun's index number, prices averaged 47 per cent. higher on June 1, 1906, than on July 1, 1897.

That means that it now takes \$1.47 to buy what \$1 would have bought nine years ago.

A curious effect of the declining value of gold and the consequent rising prices of all else is seen in the rising interest rates for money. In a word, it may be said that when the principal of a debt is losing, say, 2 per cent. a year, a capitalist will not loan money at low rates. The rate of interest must be high enough not only to give him a fair return for his capital, but to make good the 2 per cent. shrinkage in the principal, or he will invest in property or commodities and get the benefit of the rise in value in them. Of course, an increase in interest rates causes a decline in the selling prices of bonds. Hence the days of 2 and 3 per cent. bonds are gone, never to return again, until equilibrium between gold supply and other products is re-established. This changing value of gold is effecting the values of stocks also. It puts some up and others down. It makes new and difficult problems of values in all directions.

IGNORANT OF OGDENISM.

Spurred by the mere suggestion of an expose of one of the manifold lines upon which Ogdénism would approach the South in its "educational" propaganda, the *Religious Herald* of Richmond, Va., rushes to Ogdénism's defence and, with special reference to the General Education Board, the financier of Ogdénism, with its \$10,000,000 stake, says:

The Board is guided in its benefactions by some such general principles as these:

1. Strengthen the small colleges.
2. Co-operate with Christian denominations as furnishing the most permanent constituents.
3. Enlarge greatly the work of those colleges that occupy strategic positions.
4. While encouraging denominational ownership and control, encourage also the administration of the colleges on the broadest lines, so that their benefits may be bestowed without distinction as to religious beliefs.

Now, we are ready to defend the wisdom of every one of these lines of policy. Does the editor of the *MANUFACTURERS' RECORD* challenge any one of them?

We know that in seeking to help these struggling colleges not one condition is imposed, except that the local supporters shall co-operate. There is no attempt, no hint of an attempt to control the schools.

Then, as a conclusion of the whole matter, the *Religious Herald* says:

We know something of this whole educational movement, and have no hesitation in saying that we honor the motives that have controlled it, the men who originated it and those who manage it, the spirit that informs it, and we lift our hat to the man whose generous hand has made it possible.

The *MANUFACTURERS' RECORD* has challenged every one of these "general principles" supposed to guide the "benefactions" of the General Education Board, and we shall continue to challenge them as long as support is given them in honest mistake such as that of the *Religious Herald*.

Because—

Small colleges are not strengthened by mendicancy. It weakens any college intended to develop the best in the rising generation, making men and women self-reliant and self-respecting, for its executive to be spending his energies in dollar-chasing regardless of the character of the dollar and in ignorance of the real purpose of the dollar-dangler. Ogdénism has "strengthened" no Southern college, either by a gift of money with or without condition, or by making a platform for the display of its representative's rhetoric, or by planting in it some employee who has rendered faithful "campaign" services, which had not given or has not thereafter given unquestioning support to Ogdénism.

Christian denominations can hardly be benefited by co-operation with a movement which has featured in its promotive gatherings individuals who manifest no especial certainty of convictions as to the verities of Christianity, or who substitute for Christianity a hazy sort of self-evolved ethics. Such fea-

turing has been made by Ogdénism in the South.

Colleges that occupy strategic positions must not be permitted to be used to promote a strategy that threatens to sap the spirit of American life, to give the youth of the country fundamentally false notions of the place of money in human economy, and, in the cant of "democratization of education," to create an educational dictatorship or oligarchy. Such is the strategy of Ogdénism.

Human nature being what it is, the encouragement of denominational ownership and control of colleges cannot be concomitant to "the administration of the colleges on the broadest lines," unless denominationalism be merely a name, and therefore a deceit. To the attempt to bestow education "without distinction as to religious beliefs" is traceable the demoralization of American education today, the lack of the sense of responsibility, righteousness and reverence and the indefiniteness of conviction as to all questions following the weakening of religious conviction which can only be cultivated through denominational training. The primary plank of Ogdénism is the promotion of "education without distinction of race, sex or creed." But men must have a religious creed to be truly righteous and truly educated.

The *Religious Herald*, in spite of its hat-lifting and its honoring of the motives that have controlled Ogdénism, shows that it is not informed about "this whole educational movement" when it asserts that "there is no attempt, no hint of an attempt to control the schools."

Quite early in the campaign Mr. Robert C. Ogden sketched the purpose of the movement as being "to create a community of interests, a clearing-house" of educational philanthropy, and on May 17 the *New York Independent*, heartily in sympathy with Ogdénism, said, with reference to the General Education Board:

The purpose seems to be to make this Board a sort of educational clearing-house for the country.

Which, in plain English, points to a desired control of education in the country by a little group of self-constituted handlers of other people's millions, some of whom have demonstrated their unreliability as educators for any part of the country. The end, if allowed, will mean a definition of education according to the opinions of the dispensers of the millions, and, according to Mr. Ogden, "a hundred millions will be used before the work is thoroughly done."

No hint of an attempt to control the schools? The *Religious Herald* forgets that at Columbia, S. C., in 1905 Mr. Ogden directed the attention of the Conference for Education in the South to a publication "prepared for the United States Commissioner of Education in the Bureau of the Southern Education Board," which, defining the conference as a term standing "not merely for the annual convention and its agencies, but also for this whole movement, finding expression in this meeting in the Southern Education Board, in the General Education Board, and in the many subordinate organizations taking part in the work of improving the schools of the South," said:

So enthusiastic, indeed, has been the response to the influences of the Conference that it may be said to have at its ready command the whole machinery of the public-school system of the South.

No hint of an attempt to control the schools? The *Religious Herald* should acquaint itself with facts other than

those of money gifts and dress-parade utterances before it attempts to defend Ogdensism.

The points upon which it dwells are to a certain degree superficial. Still, the MANUFACTURERS' RECORD has challenged them even as they stand. But, as presented, they overlook the evil which must flow from Ogdensism's being permitted to strengthen the small colleges in its own way, to co-operate with Christian denominations, to occupy strategic positions and to control "the whole machinery of the public-school system of the South." For, Ogdensism is carrying on an education to which some of those who lift their hats or hold their hats to Ogdensism seem to be blind. It is training the negroes of the country to ideas which spell disaster for the negroes. It is training the negroes to the vain hope of social equality with whites. On that point we can only repeat what he said a short while ago.

Every white man has, of course, the right to his own opinion as to the negro's equality with him or superiority to him. Furthermore, the white man's right to act upon that opinion, limited only by the law of the land and his race-respect, is unquestionable. The great mass of whites of the country have sane convictions about the proper relations of whites and negroes. Recognizing the right of individual judgment in individual conduct, whites not carried away by enthusiasm over specious superficials have the right to demand, for the safety and happiness of the negroes especially, that alleged philanthropists and educators known to negroes as recognizing no color line either in their social relations or in their scheme of education shall not be countenanced socially by the South. Whites aware of limits to the respectable "receipt of assistance" understand the trend of the negro's natural logic, which is this:

In the "crusade for education" of the South certain whites who recognize the social equality of negroes are themselves recognized as social equals by certain Southern whites; therefore, certain Southern whites recognize the social equality of negroes.

This is the way the negro's mind runs, as indicated by his conduct whenever he dares, and he cannot be blamed for it.

But what of the whites who have encouraged the negro in such blind folly? That they thought they were strengthening small colleges, co-operating with Christian denominations and enlarging the work of those colleges that occupy strategic positions and were building up denominationalism by disregarding denominational lines in education will count for naught when the fearful price is to be paid for the negro's attempt to realize upon the instruction in social equality given him by Ogdensism.

UTILIZING WASTE IN THE SOUTH.

Mr. Robert Ranson, St. Augustine, Fla., in a letter to the MANUFACTURERS' RECORD giving some particulars of extensive drainage operations which are to be undertaken near Hastings, Fla., says:

"Surveys are now being made at Hastings for a system of shallow drains to free about 45,000 acres of land from overflow and heavy rains. That section is known as the potato district, and in the past few years has developed from supposedly worthless land to an average value of \$40 per acre, with over 3000 acres under cultivation. The natural watercourses hitherto depended upon to free the land of water from excessive rainfalls being insufficient, it is intended to dig a system of ditches by machinery for this purpose. Information is desired from makers of ditching machinery of two kinds, one for

small laterals and one for main ditches. The soil is sand, with clay subsoil, free of rock, and the average depth of drains from four to eight feet."

The development of the potato industry at Hastings has made that section one of the important potato-growing centers of the country, and land which a few years ago was regarded as almost valueless is now worth \$40 per acre. Similar developments in every line of agricultural and manufacturing industry are taking place throughout the South, and, just as hitherto, there was a vast amount of what was supposed to be waste land which is now coming into cultivation for special crops at large profit, so many waste products in Southern manufacturing interests are now being utilized for the development of great industries and the enrichment of the South.

Many illustrations of the utilization of waste products are constantly coming to the MANUFACTURERS' RECORD. The Nutriline Feed & Oil Co. of New Orleans, for instance, writes that it has purchased a plant at Crowley, La., and will engage in the manufacture of feed and rice bran and the extraction of oil therefrom. The company adds: "The rice oil which we obtain is a splendid soap stock." And the Acme Box Co. of Chattanooga writes that, having a great deal of scrap poplar left over from its factory, it is figuring on putting it to use in the making of wood pulp and corrugated wrappers for bottles.

Thus out of products which have heretofore been considered valueless new sources of wealth are being developed.

A WOMAN'S WORK IN IRON-MAKING.

Some months ago the MANUFACTURERS' RECORD reported the organization of an important lumber company in Kentucky managed by a woman. A still more important enterprise which is to a large extent the outcome of a woman's work, and of which, as secretary, she is one of the active managers, is the American Cast-Iron Pipe Co. of Birmingham. Miss C. Blair, secretary of this company, was for some years identified in a similar capacity with another iron concern in the South, and largely through her active work this company was organized under the laws of Georgia last October. A 52-acre tract of land in North Birmingham was purchased and building was commenced on October 23. The main foundry building, which is 99x351 feet, was built from special designs of Mr. Charles W. Hill, and has been pronounced by competent judges one of the strongest and most complete structures for foundry purposes in the South. The structural-steel work was done by the Noelke-Richards Iron Works of Indianapolis. Although the work of construction on the buildings of this company was only commenced near the close of last October, the company is in full operation and has work throughout the country. It is now shipping pipe to California, Kansas City, Atlanta and Nashville, and has recently been awarded a large contract for the sewerage and water board of New Orleans.

BIRMINGHAM.

At the annual meeting of the Commercial Club of Alabama, at which Mr. Robert Jamison, Jr., was installed as president, it was determined to secure a membership of 1000 during the year, and Mr. J. R. Babb, secretary, presented a report revealing the progress of the Birmingham district during the year, in which the Commercial Club has actively participated. Incorporations of the year represented \$3,886,900; increases in capital stock, \$3,982,500; 2367 new houses, \$4,118,818; extraordinary improvements, such as the opening up of mines, building coke ovens, etc., \$4,661,454; extensions and enlargements, \$806,625; railroads, \$2,800,000;

railway, light and power, \$1,800,000; other items, including \$250,000 of municipal improvements, \$554,000—a total of \$22,529,479. Real-estate transfers represented \$11,234. There were on deposit in the banks May 1, \$17,114,593.

HEALTH OF BALTIMORE.

Health conditions of Baltimore must be uniquely perfect, even beyond the observation of casual observers, inasmuch as the local Health Commissioner can find time to fool with fads dealing with suggestion of medical or surgical treatment for the correction of defects in school children, such as, for example, a minor operation on the brain of the child to cure persistence in truancy. If he will use his own mind for a moment and send the lady fad-angler he will surely discover that truancy may be best cured in the good old way, by a species of bloodless surgery, a sort of intensified and highly concentrated massage, applied not to the brain, but about halfway down from the brain and well to the rear. Meanwhile, it may be asked, what are parents doing with their brains for the correction of persistence in "educational" fad-pattering?

THE COTTON MOVEMENT.

In his report for June 15 Col. Henry G. Hester, secretary of the New Orleans Cotton Exchange, shows that the amount of cotton brought into sight during 288 days of the present season was 10,534,192 bales, a decrease under the same period last year of 1,973,900 bales. The exports were 6,138,345 bales, a decrease of 1,780,870 bales; the takings were, by Northern spinners, 2,236,126 bales, an increase of 90,105; by Southern spinners, 1,986,740 bales, an increase of 83,396 bales.

ANOTHER!

Whatever happens, an Arkansas summer resort will have received some sort of a notice from the "Southern Cotton Harvester Convention" this week, the proceedings including a speech by "one of the greatest orators of the South" and the taking in delegates, representing the national Agricultural Department, of "mental notes as to how that branch of the government may best advance the interest of cotton." Of course, Southern governors appointed a host of delegates in print.

ALABAMA'S NEW ORE FIELD.

Comparative Analysis of Alabama Gray Ores and Virginia Oriskany Ores.

Mr. John Sharshall Grasty of the Johns Hopkins University, whose recent article on "The Gray Ores, or Siliceous Hematites, of Alabama," published in the MANUFACTURERS' RECORD of May 31, has attracted wide attention, in a letter giving some additional information on these ores in comparison with the Oriskany ores of Virginia, says:

"While these ores carry a considerably higher percentage of silica than the average Alabama brown ores (limonites), there is presented a striking parallel between their silica content and the silica carried by the famous Oriskany ores of Virginia. The Oriskany ores, as is well known, are limonites averaging from 40 to 43 per cent. in iron, and in Virginia, with the exception of a single furnace, where the calcareous ores of the Clinton formation are used as a mixture, it is the practice to flux them (the Oriskanyes) with Trenton limestone alone. In Alabama, on the other hand, it is exceptional to find a furnace that does not carry in its burden a suitable quantity of limy (fossil) ore. With millions of tons of this limy ore within reach, the Alabama furnaces ought to be able to use advantageously an ore even more siliceous than is used in Virginia, because in Alabama a self-fluxing mixture is obtainable by a combination of

calcareous and siliceous ores occurring within striking distance of each other. With such a mixture the cost of making a ton of iron is obviously less than where the mixture, as in Virginia, must consist of siliceous ore and limestone only. But in spite of all this, some furnace men have till now looked askance at the gray ores, which they considered too siliceous to be very valuable. In this connection it may be worth while to compare, from the point of view of their silica content, the ores of the gray-ore district and the ores mined from three of the largest deposits in Virginia.

"Where the ore occurs in greatest quantity in Virginia it is found on the flanks of three parallel anticlinal mountains, known as Rich Patch, Middle and Front mountains. There are two diverging mountains in the northern part of the gray-ore district of Alabama which merge to the southward. An analysis of a sample taken from the deposit on Rich Patch mountain compared with that of a sample from one of the ore beds outcropping on the easternmost of the two diverging Alabama mountains is given in table No. 1, which appears below. A similar comparison of an analysis of samples taken from Middle mountain in Virginia with one made from the westernmost of the Alabama mountains just mentioned appears in table No. 2. In table No. 3 is given a typical analysis of the ore mined from Front mountain in Virginia in comparison with one from an ore bed near the junction of the two Alabama mountains above described. An inspection of these three tables makes it apparent that the ratio of iron to silica is greater in the gray ores of Alabama than in the Oriskany ores of Virginia. These Oriskany ores, despite their high silica, are the mainstay of the iron industry of 'the Old Dominion,' and for more than half a century have been continuously used, first in the old charcoal furnaces, which supplied material of war to the Confederacy, and afterwards in modern coke furnaces, which have yielded foundry iron of unusual excellence and wide reputation—and this in spite of the fact that they carry what would be considered by the average ironmaster of Alabama an excessive percentage of silica.

"The analyses (above referred to) of the Oriskany ores of Virginia and the gray ores of Alabama are as follows:

No. 1.			
Virginia Oriskany.		Alabama Gray Ore.	
Iron.....	47.50	54.95	46.30
Silica.....	17.00	16.26	25.50
Alumina.....	1.00	2.90	1.00
No. 2.			
Virginia Oriskany.		Alabama Gray Ore.	
Iron.....	43.00	46.30	44.14
Silica.....	25.50	25.90	30.00
Alumina.....	1.00	3.89	
No. 3.			
Virginia Oriskany.		Alabama Gray Ore.	
Iron.....	40.00	44.14	
Silica.....	30.00	29.10	

"Some iron people who have studied the gray-ore district of Alabama estimate that within a distance of 8 or 10 miles there is at least one-half as much ore as the total supply of 700,000,000 tons claimed by the United States Steel Corporation. This seems to me, as a geologist, a rather extravagant estimate, but I do not hesitate to say that there has now been fully opened up for development a new iron-ore field that in time will become of increasing importance to the South and materially strengthen the position of the iron and steel interests of that section. These discoveries indicate a new source of ore supply of this State very nearly, if not quite, as great as the total supply of the Birmingham district. While I do not care to compute in tons the extent of these discoveries, the work of exploitation and development which has been very quietly carried on during the last 12 months or more indicates that in a compact territory there is a quantity of ore sufficient to supply the dozen East Alabama furnaces for over a century."

KENTUCKY'S INVITATION TO THE WORLD.

[Special Correspondence Manufacturers' Record.]

Louisville, Ky., June 18.

With hearts still thrilling with joyful emotions, with reunions and local homecomings now radiating from Louisville to every portion of the old Commonwealth, it is perhaps too early to attempt an estimate of all the blessings that will flow from the Kentucky "homecoming" festivities that have centered in Louisville during the week just passed. That it has been a most memorable occasion, a perfect pentecost of kindness and hospitality, even those on the outside have been able to discover, and the many thousands who have gathered together here with the highest impulses of exalted fellowship feel that they have gained inestimably in the strengthening and freshening of all the sentiments that most enoble and adorn humanity. Notwithstanding the idea of a homecoming for the absent sons and daughters of the Mother State is an entirely new and novel one, and as such is a new item to be exploited by all the publications in the land, giving advertisement and publicity of the most valuable sort, yet the motive for the undertaking seems as far removed from thoughts of material advantage as the most generous individual act could be at any time or anywhere. Sentiment, sincere and simple, has been all pervasive, and all the days and nights have been almost as one perpetual camp-meeting lovefeast.

Nothing could more forcibly demonstrate this fact than the large portion given to Stephen C. Foster in the program of the occasion. Not only was one entire day devoted to eulogies and glorifications of this immortal writer of songs, but the bands in the streets and the people everywhere paid unceasing homage to the composer of "My Old Kentucky Home" and all the other Southern melodies he wrote, and which have found a place in the heart of all humanity. Stephen Foster, Daniel Boone and Abraham Lincoln were the heroes to whom especial tribute was paid, and home, heroism and humanity were the themes of every discourse. Kentucky manhood and womanhood of both far and near have received a new baptism of grace and exaltation, and if possible there will be greater State pride among the sons and daughters of Kentucky than has ever before existed.

The daily events of the week have been chronicled in the newspapers of the country, and need not be dwelt upon in detail here. I will seek rather to give some sort of composite picture of the event in its entirety, and to record an impression of what it means to Kentucky to have given a week to the hospitable entertainment of her absent children.

Kentucky will gain most honorable fame abroad for having so graciously and successfully carried out an enterprise as original as it was popular. Other States may follow her example, and in the course of years Kentucky may have another homecoming week, but this event will stand in a place by itself, and its glory cannot be taken away.

Where all have borne so large and faithful a part in the success of the undertaking it is difficult to bestow individual praise. All of Louisville has labored valiantly, with results seen in the splendor of the pageants and parades, the perfection in entertainment and in the handling of the throngs. Of course, on Miss Louise Lee Hardin, now of Chicago, to whom the inspiration came, and who made suggestion to the Commercial Club of the idea of the homecoming week, must all credit be bestowed, and next on the honor roll appears the Commercial Club itself, which for months has been at work on every de-

tail of the event. It is not invidious distinction to say that to the tireless energy of Mr. R. E. Hughes, secretary of the Commercial Club and director-general of the homecoming week, is much of the perfection of detail due, but it is also true that unceasing assistance was given him by his associates, and as in the case of the Santiago sea fight, the glory is great enough for all to have a share.

It is difficult to estimate the number of outsiders who came to Louisville at this time. Only the railroads can give accurate figures, and they will not cast up accounts for some time to come. A very conservative estimate is that 25,000 people came into the city by rail to attend the festivities, this crowd, of course, being augmented by local and suburban participants until so great a throng filled the streets it was surprising to find the minimum of discomfort that prevailed. Louisville's fine new hotels, vast new armory, steam and street railroad transportation facilities and ability to care for large crowds have already suggested to Louisville people that this city is now in the list of those where national political and other large conventions may be held.

There were notables here from all over the land, and men famous in many lines were among the visiting throng and on the speakers' lists. Ex-Governor Francis was among the thousands who came over from Missouri; ex-Senator Lindsay came from New York, and of others who returned from many corners of the Union their name is legion. A principal speaker at the Lincoln Day festivities was Adlai Stevenson, who has been away from the State so long his Kentucky origin is hardly generally known.

No sort of mention of the occasion would be complete without a reference to the part played by Henry Watterson, whom to see and hear was undoubtedly as great a pleasure to many people as was any other feature of homecoming week. By pen and voice "this greatest living ornament of philosophizing journalism" contributed vastly to the happiness of the occasion, and hard indeed must it be for the visiting ex-Kentuckians to resist the tender appeal to remain contained in his editorial "Must You Go?"

Just how many will heed this heartfelt invitation cannot now be said, of course. Mostly among the homecomers were those who have made a success in their new home and whose ties there are not to be severed. But they have seen a city thrifty and prosperous as any they now know. They have seen skyscrapers being built and have learned that young men are finding openings for enterprise and activity in the old Mother State. They have heard that business prosperity pervades Louisville and all Kentucky, even as it does the places where they now are. They have learned that Louisville has more than a score of millionaires—conclusive evidence of the opportunities for enterprise that exist—and they have found a most delightful city, with parks, boulevards and all possible comforts, and have discovered that never in her history was Kentucky more entitled to fame as the home of fair women and brave men. So if no great portion of the visitors shall conclude to remain it may be set down for a fact that there will go forth thousands of enthusiastic evangelists who will preach Kentucky's charms.

While Louisville has been the chief theater of action during the week, one of the days was devoted to the ceremonies of laying the cornerstone of the new State Capitol at Frankfort. Greater Kentucky was the theme at this event, and pictures

were drawn by the speakers there of the Kentucky that is to be when her wonderful resources of coal, iron, timber, oil, gas, etc., are more completely developed and utilized, and when her rivers are fully improved and opened to commerce.

This week there will be numerous town and county homecomings all over Kentucky. Excursionists have very generally had their tickets extended for another 30 days, and now that they are here—many of them after a lapse of many years—they will not leave till they have visited early scenes and the friends of long ago. They will linger fondly around the old Kentucky home just as long as they can, even though in the end they may have to say to "Marse Henry," with a sigh, "It's mighty hard to leave you all, but really we must go."

ALBERT PHENIS.

FOR POWER AND LIGHT.

Features of Construction and Equipment of a Baltimore Plant.

Baltimore's electric supply for lighting and power purposes will be largely augmented by the placing in commission this week of the first unit of the Westport power-house of the Consolidated Gas, Electric Light & Power Co.

This plant, which it is claimed is the largest lighting and power station in the South and the largest reinforced concrete power station in the world, is very advantageously located on the outskirts of Baltimore on the Patapsco river, and includes 23 acres of land lying between the tide-water line of the Western Maryland Railroad and the Curtis Bay branch of the Baltimore & Ohio Railroad. Its close proximity to these railroads, and with water connection to the Canton branch of the Pennsylvania Railroad, gives it the advantage of the transportation facilities of the three great coal-carrying roads entering Baltimore.

To further facilitate the uninterrupted operation of the plant a large coal field has been laid out capable of holding one year's supply and equipped with a large two-ton capacity gantry crane, which traverses the full length of the field. The equipment for this crane was supplied by the Morgan Engineering Co. of Alliance, Ohio, and was installed by the Lauer & Harper Company of Baltimore.

Ample water supply is obtained from Gwynn's falls, and to provide for emergencies a large lake holding 1,750,000 gallons of water has been constructed.

The building, which is 115x255 feet and single story, 70 feet high, with operating galleries and coal storage, is constructed throughout of reinforced concrete. It was designed by the architectural firm of Simonson & Pietsch of Baltimore, and constructed by the Baltimore Ferro-Concrete Co. The stack, which is built of radial and buff brick, is 200 feet high and 14 inside diameter at the top, and was constructed by the Alphons Custodis Chimney Co. of New York.

The boiler system consists of 18 650-horse-power water-tube boilers, equipped with superheaters, and was installed by the Babcock & Wilcox Company of New York.

The engine equipment comprises four vertical compound condensing type engines, having a rated capacity of 3000 horse-power, with 50 per cent. overload, giving a maximum capacity of 18,000 horse-power. A fifth engine to be installed will have 7500 rated horse-power, with a maximum capacity of 11,250 horse-power, making the total aggregate capacity of the plant 30,000 horse-power. These engines were made and installed by McIntosh, Seymour & Co. of Auburn, N. Y.

The electric generating equipment consists of direct-connected alternators with a pressure of 13,000 volts, and were made

and installed by the General Electric Co. of Schenectady, N. Y. On account of the high voltage attained, ordinary switches were considered too hazardous, and electrically operated and controlled oil switches were installed.

The switchboard was manufactured and installed by the Westinghouse Electric & Manufacturing Co. of Pittsburg, Pa.

The Consolidated Gas, Electric Light & Power Co. is the successor of the United Electric Light & Power Co., and controls the majority of stock of the Consolidated Gas Co. The officers of the company include Mr. Alton S. Miller, vice-president; Mr. P. O. Keilholtz, consulting engineer; Mr. Douglas Burnett, manager of electric department, and Mr. W. Stuart Symington, secretary and treasurer. Mr. S. Davies Warfield is chairman of the board of directors and of the executive committee of the board.

FULLER COMBING GIN.

Chattanooga Favored as the Place for Its Manufacture.

The system of ginning cotton devised by Mr. James T. Fuller, by what is known as the Fuller combing gin, has been so thoroughly tested during the last few years that it is safe to believe that its general introduction will mark a very radical change in ginning. It often happens that in commercial operation the full anticipations of inventors are not fully realized, but in this case the Fuller gin has been put to so many severe tests that it ought to work out very satisfactory results. Mr. J. J. Farnan, who for several years has been secretary of the D. A. Tompkins Company, the High Shoals Manufacturing Co. and the Atherton Mill and the Edgefield Manufacturing Co., has resigned in order to accept the position of secretary-treasurer of the Fuller Combing Gin Co. This company has been chartered at Charlotte with a capital stock of \$400,000, of which \$100,000 is 7 per cent. cumulative preferred and \$300,000 is common stock. For some time past the executive committee of the company has been making an investigation as to a location for a plant to build the Fuller gins. This committee has now made a report in favor of Chattanooga, in which that city is given a very strong commendation as an attractive location for manufacturing. In this report it is said:

"We beg to advise that, taking all in all, we recommend Chattanooga, Tenn., as the most economical location for the manufacture and distribution of cotton gins throughout the cotton belt, the principal items of economy being—

"First. The low cost of raw material, owing to the local production of excellent qualities of iron and coke and the enormous amount of lumber available in the Chattanooga market, originating from Tennessee river points.

"Second. The availability of both skilled and unskilled labor under exceptionally favorable conditions, and last, but not least, the item of distribution over the numerous railroads radiating from Chattanooga, in connection with the direct water communication via the Tennessee river with all river points in the Mississippi valley, and the Chattanooga method of handling freights, taken together with climatic conditions and low cost of living, will enable us to operate the business with a maximum amount of saving in all lines, with a consequent profit for our stockholders.

"We beg to report that a working agreement has been arranged with the Chattanooga Chamber of Commerce whereby they have agreed to place \$35,000 of the company's preferred stock at par, said funds being available when your executive committee has placed a like amount."

American Labor in Relation to Industrial Advancement and Immigration.

[Written for the Manufacturers' Record.]

That prosperity is not without its drawbacks is indicated in a series of letters from American manufacturers which the MANUFACTURERS' RECORD begins to publish in this issue. In view of widespread complaints of the shortage in the labor supply in many lines throughout the country, this condition being especially pronounced in the South, we asked all of our advertisers, about 1000 leading concerns, representing all sections, to write us for publication from their own experience and observation on the following points:

What is the situation in your section as to the labor supply, skilled and unskilled? Is it sufficient for the needs, or are business and industry restricted by a shortage?

Is the individual laborer or mechanic more efficient than formerly, or less so, and in either case, to what do you attribute the change?

If there is a shortage of labor, are any efforts being made to increase the supply by bringing in foreigners or otherwise?

In your opinion, what is needed to increase the supply of labor and to add to its efficiency in order to keep up with the rapid expansion of the world's industrial interests?

Replies, made with great frankness, show that the manufacturers of the country are doing hard thinking on the subject and are moving generally toward two points, the proper training of American youth to skilled industry and the encouragement of the immigration of the sturdy, for the solution of the problem becoming more and more pressing.

There is a shortage of labor, as shown by the letters. This is most marked in the Southern States, where even individuals who, operating upon special lines, have an adequate supply find a general lack in their neighborhood, but in the East, in the Middle West and in manufacturing States beyond the Mississippi the situation is similar, though, perhaps, not as embarrassing. In some regions, especially near the great cities, the number of skilled workmen is sufficient, but there is a demand for the unskilled by no means met. In others there are plenty of unskilled, but not enough skilled, and in others yet both classes are short.

Like variations occur in efficiency of the labor, though a tendency toward lessened efficiency, or lessened productivity, seems to be widespread. This is attributed by some manufacturers to the organization of labor, permitting mediocrity to set the pace for the mass and suppressing individual ambition; by some to the increase in specialization with machine tools whereby the operator learns to do but one part of a job and is even stunted in doing that; by some to the opportunities created in a period of prosperity for the partly-trained man to undertake work that he is not qualified to do right; by some to the union rules limiting the number of apprentices in a shop, with the effect that the call for trained men cannot be answered adequately; by some to a radically false system of education which teaches American youth to prefer a \$6 a week job and a clean collar to a \$4 a day job with soiled clothes; by some to undue restrictions upon immigration to this country, barring competitors as well as incompetents, and by others to the shiftlessness and laziness which practically make an increase in wages a curse to the wage-earner. The last mentioned is especially noticeable in the case of negro common labor, where the ambition seems to be to earn only so much in every seven days, and if it can be earned in two or three days, to knock off and rest for the other four or five days. The spirit of so-called independence of employers thus begotten is, however, not the exclusive possession of unskilled negroes, whose natural history excuses them in part, but it is also manifested in the case of white men of the highest proficiency, who, in the knowledge of the ease with which employment may be had, are inclined to rove, and, consequently, industries requiring steadiness and stability for their full success are the sufferers. Vagrancy of the more pronounced type, that is, the vagrancy which will do no work except under compulsion of the law and lives upon the industrious elements of the country, is another evil, complained of mostly in the South, affecting both employers and employees.

The desire for immigration to meet the deficiencies is at present strongest in the South. This seems to be explained by the fact that material for common labor predominates at present among the newcomers to this country, and that the demand for such is greater in the South than in other parts of the country, and to the fact that for skilled purposes the foreigner, who is yet to be trained, is not likely to become as efficient as a native American. Suggestion of immigration induces a wide range of opinion, extending from a willingness to "stop the wagon in the middle of the road" rather than to destroy the American spirit through large importations of foreigners to the strong desire even that the law excluding Chinese labor be repealed. There is shown, too, a shifting after trial from one class of foreigners to another; contentment with conditions is expressed in New England, where so great a proportion of the labor is of foreign origin; a wish for a good class of immigrants prevails in the West, and in the South public sentiment is becoming stronger and stronger for an enlargement of work done by State immigration bureaus and other reliable agencies, to be supplemented by the movement of foreigners direct to Southern ports, whence they may be distributed wherever needed in agriculture, in mining, in manufacturing, in the lumber camps and in construction work of various kinds. One of the strongest arguments for immigration to the South is that it will not only meet an immediate need, but will discover to the negroes that their so-called independence is but a temporary thing, and that, to have any employment at all, they must be willing to work persistently and regularly or disappear in the face of competition with foreign-born.

Meanwhile, in parts of the country where manufacturing has been long established, emphasis is laid upon the necessity for a radical change in educational methods, for the founding and liberal support of schools where the rising generation may learn thoroughly a whole trade and for the enlargement of the apprenticeship system, the strong point being made that, whereas in training for the professions all is outgo until active practice begins, the apprentice is paid while he is learning. Criticism is also made of the methods of handling employees and employers upon some such principle as that the one is merely an individual to be exploited to the full for the sole benefit of the other, and experience is cited to demonstrate the advantages of what has come to

be called "industrial welfare work," and in advocacy of a recognition of the human element in the relations of employer and employed.

It is believed that no clearer view of the many sides of a momentous question of labor has been given in recent years than in the letters which follow:

On Paying Wages at Too High a Rate.

W. S. Kilby, assistant secretary and treasurer Alabama Frog & Switch Co., Anniston, Ala.:

We will try to answer your questions in the order shown in your letter.

Skilled laborers throughout this section are plentiful. Common or unskilled laborers are also plentiful if they could be forced to work steadily.

As to the efficiency of laborers, we believe the skilled mechanics improve in efficiency, due to the fact that they work steadily. On the other hand, the common laborers are less efficient than formerly, due to the fact that so much time is spent in idleness, and, as everyone knows, idleness begets laziness.

There is practically no shortage of common labor except as outlined above, and we know of no efforts being made to supply additional labor by bringing in foreigners or otherwise.

In our opinion, what is needed to increase the supply of labor and to add to its efficiency, in order to keep up with the rapid expansion of industrial interests, is to fix the price of labor at such a figure as will compel the laborers to put in full time.

It has been our experience that where the price of labor is fixed at a high rate the negro laborers, who constitute the bulk of the laborers of this section, will work only long enough to secure an amount sufficient to pay actual cost of living, say, \$5 or \$6 per week. For example, if the negro laborer is paid at the rate of \$1.50 per day he will make enough in about four days to meet all actual requirements, and will therefore lay off an average of two to three days per week; whereas, the same laborer drawing \$1 per day would be compelled to work the full time, or six days per week, in order to make enough to live on.

Direct Immigration to Southern Ports Needed.

P. Byrne, civil, mining, bridge, mechanical and consulting engineer, Birmingham, Ala.:

My business of consulting engineer brings me in close touch with the labor conditions of the South, as I have charge of large construction contracts of various descriptions. In the letting of such contracts we endeavor to make the finishing date ample for the contractor to complete his work in the time specified, but in the last two years or more I have failed to get a contract completed in the time called for, on account of the inability of the contractors to secure the necessary help. Our manufacturing companies are all complaining of a shortage of hands. None of them can accomplish the work desired or needed, from their failure to procure a sufficiency of help. In the country districts the conditions are no better, as the laborers have left the farms to engage in public work of various descriptions, which leaves the farmer without help to attend or make his crops. The above state of affairs naturally makes the help procured less efficient than it would be under normal conditions, as one is compelled to accept the labor offered without being able to choose its skill or efficiency. Most of our manufacturing companies have agents at the immigration ports to secure all the foreign labor they can procure. They are meeting with a reasonable amount of success in their efforts. We also have a State immigration association which keeps a representative in New York. The said agent devotes his best efforts to turn a portion of newly-arrived immigrants to our State. We suppose the above is the best and only thing that can be done under the circumstances. What we need to relieve the situation is direct immigration to our Southern ports. Some of the steamship companies have commenced the movement of landing immigrants in the South. We have received some help from that source already. If the direct immigration is kept up and increased to sufficient proportions it is bound to benefit this district, and will probably solve the labor problem in time.

Increase in Efficiency Noted.

John S. Jemison, Jr., president McClary-Jemison Company, mine, mill, furnace, electrical and street railway equipment and supplies, Birmingham, Ala.:

The skilled and unskilled labor supply is very limited—not enough for our needs—and business naturally suffers. The individual laborer and mechanic are much more efficient than formerly, owing to larger concerns and to the fact that this city has grown very much in the last few years. There are strenuous efforts being made to increase the supply of labor by an immigration bureau, of which Ross C. Smith is the head, supported by the railroads. As we are not in the manufacturing business, and have not made a study of this question, we would prefer not to express our opinion as to what is needed to increase the supply of labor, as there are so many people more able to answer than we are.

Gain in Using Labor-Saving Machinery.

D. N. Camp, president and treasurer Skinner Chuck Co., New Britain, Conn.:

There is in this section in some branches of business a deficiency in the highest skilled labor. In the mechanical trades the shortening of hours of labor in each day has proportionally lessened the work done by each individual. There has been little change in the efficiency of labor, except the gain made by using labor-saving machinery wherever practicable. Strikes and labor disturbances have in a few instances existed, to the injury of the employer and to the still greater injury of the laborer. All that seems to be needed in this section is fair treatment and mutual understanding between employer and workman, and that is so far secured that there is very little trouble or disturbance in business in this section. There is apparently no lack of ordinary laborers, as the great influx of immigrants furnishes a supply.

Shifting Tendency of Workmen.

O. E. Smith, president Birmingham Rail & Locomotive Co., Birmingham, Ala.:

We employ not only common, but also skilled labor. We find that the negro laborer, whom we are today paying from \$1.25 to \$1.50, is practically worthless. The men drift from one place to another, looking for "easy jobs," working but little more than half-time anywhere, and we find that in many instances this negro labor is being replaced with foreign. These, however, are the raw immigrants who have just landed, and are,

in our opinion, even poorer than the negroes, although they do work every day. We find that the skilled laborers, with few exceptions, are equally as bad as the common. The men seem to know that they can get employment at some other plant if they do not give satisfaction, and consequently are constantly shifting from one shop to another. They take no interest in what they are doing, for they do not stay at one place long enough to become accustomed to the place nor the work. In our opinion, it is costing from 25 to 40 per cent. more to do work today in our line than it did four years ago, and we are paying practically the same prices. We look upon this situation, however, as one result of the boom that is now prevailing throughout the country. We believe that sooner or later these matters will adjust themselves.

Shortage Due to Country's Prosperity.

A. S. Heyde, general manager Whitlock Coil Pipe Co., Hartford, Conn.:

While there is some shortage in the labor supply in this section of the country, and it is somewhat harder to obtain help than formerly, we are not handicapped to any great extent. Prevailing wages, however, are higher than formerly, increasing the cost of production. Skilled labor is more difficult to obtain than formerly, but can be had at a price. We are unable to give an opinion as to the best way of increasing the labor supply. So long as the present prosperous condition of this country continues we are inclined to think that there will be a certain amount of shortage of labor, in spite of anything that can be done, but should a depression occur, we believe the supply will more than equal the demand.

American Boys Urged to Learn Trades.

Walker & Elliott, machinists, Wilmington, Del.:

We hear some complaints about the scarcity of skilled labor in our machine shops and foundries, but none in regard to the scarcity of unskilled labor. We suppose the average ability of skilled labor is about the same as it has been for some time, although we hear some complaints along this line. Personally, however, we have not been seriously affected by either. We do not know of anything being done to improve the quality or quantity of skilled labor except our night draughting schools, which are in operation during the fall and winter. We do not know of anything we could suggest that would improve the situation, unless it would be that more American boys would learn trades and take advantage of the means that are provided for them to become more proficient in them.

Depriving Mechanics of Incentives.

W. T. Jordan, Jr., of H. G. & L. J. Dill, consulting and constructing engineers, Washington, D. C.:

We are hardly competent to answer your questions generally, as about the only labor we employ is common labor and a few carpenters. There are plenty of both to be had here, but practically none that can be called good. From our experience we should say that labor has been getting steadily poorer for the last 10 years, and we attribute it entirely to the action of the labor unions, which make all mechanics equal and offer incentive to none. To state the case briefly, we believe in "open shop."

Small Farmers as a Solution.

Wilbur McCoy, agricultural and immigration agent Atlantic Coast Line Railroad Co., Jacksonville, Fla.:

In our territory, while there is no great shortage in the labor supply at the present time, the situation to the employers of labor is quite a strained one. The great trouble is that the labor we have is so unreliable—principally negro labor—this for our saw-mills, naval stores and agricultural people—what you might call unskilled labor. The great trouble seems to be that while they are paying much higher wages than ever before, the higher wages the more unreliable the labor. The average negro laborer wants about so much money to live on, and if he can make it in two days of the week, that is all he wants to work; if he has to work three he will do so, but no more than he has to. I think this is the principal trouble at all points.

Efforts are being made in many localities to bring in foreigners to increase the labor supply, and for the past three or four months quite a large number have been brought into our territory. It is a question as yet as to whether they are going to fill the want or not. Personally, I do not see any reason why they should not; that is, provided the Southern industries or farmers will pay as much for such labor as it would receive in the North.

The solution of the labor question in the South to me can only be arrived at in the agricultural territory by securing small farmers, and instead of our farmers trying to work large plantations of anywhere from 500 to 5000 acres on the wage system, they must divide up this land or plantation and sell to small farmers—men who are good truckers and good farmers, but of limited means—in tracts of 40 and 80 acres and upwards. This will to a great extent settle the labor question in the agricultural territory, and I do not know of anything else that ever will, and I think that every inducement should be offered in the way of reasonable prices, time payments, etc., to induce skilled farmers, either from the North or from other countries, to take up our Southern lands. The industrial question is a harder proposition. I think, however, that that will be largely settled by the importation of foreign labor. I simply give you this as my personal views in the matter.

Should Bring in Many Thousand Immigrants.

Malsby Machinery Co., Jacksonville, Fla.:

In our section the supply of labor, both skilled and unskilled, is very limited. It is not sufficient for the needs. Business and industries are both restricted by a shortage. The individual laborer or mechanic is more efficient than formerly. We attribute this to the growing demand for this class of labor in our section. There are efforts being made to increase the supply of labor by bringing in foreigners, and our opinion as to what is needed to increase the supply of labor and add to its efficiency is to bring many thousands of immigrants to this country, as this section can absorb any amount of new laborers for the next 10 years.

Less Competency in Skilled Labor.

Milton R. Bacon, president Bacon Equipment Co., Inc., founders and machinists, mill supplies, Albany, Ga.:

The supply of labor, both skilled and unskilled, for all conditions of work in this section is far under the demand, complaints being heard at all times from manufacturers and farmers. We cannot note that there is any difference in the unskilled laborer, for the reason that you have to keep behind him with a sharp stick in order to get any work from him, no matter what the conditions are. The skilled laborer is getting more

trifling and less competent every day. This condition of affairs we attribute solely to the harmful effects of too much unionism. In other words, the motto of the union man seems to be to "give as little work as possible for as much pay as you possibly can get; give your employers all the trouble you can; kill as many jobs as you can without being caught up with; if you are caught killing a job and are reprimanded for it, call it a grievance and get the gang to walk out with you." This is the average skilled machinist in this section, and a very mean kind of article he is, and will so remain until these false union methods are stamped out. In our opinion, the best way to secure unskilled labor in the South is to have more strict vagrancy laws and to enforce them. If all the idlers and barroom bums throughout the country were made to work, importation of labor would not be necessary. As it is now, the Business League of this city is taking active measures toward importing a lot of foreign laborers.

Employers Forced to Take What They Can Get.

H. G. Matheson, chairman of the faculty, Georgia School of Technology, Atlanta, Ga.:

There is a decided shortage in skilled and unskilled labor supply in this section. By reason of my position, I can speak more authoritatively as concerns the shortage of skilled labor. Constant and increasing demands are being made for this labor, and the supply is very limited. From contractors and others I learn that the individual mechanic, generally speaking, is less efficient than formerly. This condition is attributed to the great demand for labor and the shortage which forces employers to take, not what they want, but what they can get. From the daily papers I learn that efforts are being made to induce foreigners to locate in Georgia, in common with other neighboring Southern States. My opinion is that labor conditions will soon compel the State to organize an immigration bureau to locate foreign labor within our boundaries.

Industrial Activity Stripping the Country Districts.

V. H. Kriegshaber, president Atlanta Terra-Cotta Co., Atlanta, Ga.:

Labor conditions in this section of the country, as far as common labor is concerned, could not be worse. The tremendous activity of all of our industrial concerns has absorbed the labor from the country districts, and they are still short of what they need. The negro has proven a failure in so far as stable labor is concerned, and we are now confronted with the necessity of getting our common labor from other sources. Naturally, we turn our attention to the immigrant. The increased demand is advancing the wage scale, and we believe that if competent and steady white labor were brought into the South in larger numbers they would find steady and remunerative employment. When you take into consideration that they can work 12 months in the year, while in other sections of this country that is not possible, the advantage is manifest. At a meeting just held by the Georgia Industrial Association, where the immigration question was the principal topic of discussion, an effort will be made to have the State of Georgia establish a bureau of immigration. Under such an auspices we believe that the results will be satisfactory and beneficial. Of course, this will not be possible if there is any restrictive legislation on this subject, and we hope that the Southern representatives will see the needs of their own section and prevent anything of this kind.

Opportunities for Intelligent and Thrifty People.

Will Scott, W. M. Scott & Co., real-estate agents, Atlanta, Ga.:

Scarcity of laborers, with the extraordinary amount of building going on and with the extension of and building new railroads leading to Atlanta, the demand is extraordinary. The demand has been extraordinary. The supply has been filled in this immediate section by the hands leaving plantations and the mechanics coming in from smaller towns. Wages advanced 25 per cent. The mechanic negro is more efficient. He receives better wages, and there is less friction between him and the white carpenter or mechanic, as both receive better wages, and one helps the other. By practice the negro becomes more efficient. The mills, the factories, the mines are all reaching out for help. The farmer is distressed, for farming pays, as is evidenced by the fact that all our country banks are loaded down with surplus money of the farmer. The time is near at hand when he will either have to curtail planting or import help. No organized efforts to increase the supply. There never was a country more prosperous than the South is today. The negro has flocked to the cities, where he is well remunerated and is near the educational institution, whether to the ultimate good of his children, is a grave question. The crowding together leads to immorality and idleness. The ordinary negro laborer is growing less and less reliable. The percentage of negro barroom loafers, gamblers and idlers is growing. And in like manner the penitentiary and chain gangs are gaining. The negro who worked the plantation on shares, when he had accumulated sufficient to be independent, left the farm and hid himself to town. I have faith to believe that intelligent people living in less prosperous sections will take advantage of the situation; that intelligence and thrift will push out ignorance and sloth, and that the grand opportunities offered, with the climatic advantages, will be taken advantage of.

Necessary to Pay Higher Prices in Order to Attract Immigrants.

George B. Hinman, general contractor, Atlanta, Ga.:

In this section, I wish to say, there is a marked shortage of ordinary labor. This is true not only in the city of Atlanta, but in the surrounding towns. In addition to the shortage of labor, the individual laborer is less efficient than formerly. In my own case there is a marked tendency for the laborer to stay away from his work on Saturday and Monday, thus virtually disorganizing the force. I attribute this to the fact that the negro is naturally an improvident creature, and as long as he can earn enough to keep him alive, buy whiskey to get drunk on and keep from being taken up under the vagrancy act, he is satisfied. This is a deplorable condition of affairs, and is a serious drawback to the progress of this section, as well as being a heavy burden for the individual to carry. In my opinion, what is needed here is a class of laborers who are not only willing, but anxious to work 10 hours a day and six days a week. I think, however, before any of the immigrants can be induced to come this way it will be necessary for us to pay higher prices than we are paying.

You ask if any efforts are being made to increase the supply of labor by bringing in foreigners, and in reply to this question I would say that up to the present time the efforts made to bring immigrants here have been almost entirely (so far as I can learn) on paper. Personally, I had some correspondence with a labor agent in New York, and found that it would be possible to bring a crowd of men to Atlanta, but that the first outlay would be about from \$20 to \$25 per man for railroad fare and other expenses, which I would have to take the chance of collecting from the men after they arrived here and began work. You can readily see that if they refused to work I would

high as those paid in the North. If this is true, it occurs to us that one good way to increase the laborers in the South would be to pay better wages.

Methods Rather Than Shortage the Difficulty.

Nordyke & Marmon Company, Inc., Indianapolis, Ind.:

In this section the labor supply, both skilled and unskilled, is barely adequate for the needs of the district, and there is no surplus of labor of any kind. We do not think that business and industry is restricted in any way by shortage, but in certain lines industry is undoubtedly restricted by some of the methods of labor. In our opinion, the individual laborer or mechanic is less efficient in general branches of trades than formerly, while, on the other hand, the individual is undoubtedly more efficient in certain specific branches of trades. We attribute the change to the tendency towards specialization in both trades and manufacturing methods. There are no efforts being made that we know of to increase the supply of labor by bringing in foreigners, although foreigners who are naturally coming in are being used in certain lines where formerly native labor was used exclusively. In our judgment, in order to increase the supply of labor and add to its efficiency, the two greatest essentials are to eliminate the restrictive methods of some labor and in all branches to give the apprentice boy every opportunity to learn a trade. Incidentally, trade schools where boys are taught actually to work should be encouraged.

Less Efficiency Than Formerly.

New Albany Manufacturing Co., New Albany, Ind.:

We have had to increase wages during the last year about an average of 10 per cent. Common labor is hard to get, on account of considerable municipal improvements paying an advance in wages over the regular factory price. If anything, the individual laborer or mechanic appears to be less efficient than formerly. They appear to take less interest, knowing that work is plentiful, and if they cannot work one place they can get it another. We hesitate to venture an opinion as to how to increase the supply of labor, but our opinion is that it would be better to restrict the bringing in of foreigners wherever possible.

Foreign Labor Practically Unknown.

J. W. Sanderson, secretary and treasurer Cement Machinery Manufacturing Co., Burlington, Iowa:

We wish to state that there is a shortage of both skilled and unskilled laborers, and the different industries are somewhat restricted by these shortages. It is our experience that the laborer or mechanic is much less efficient than formerly. We attribute this to the present labor agitation more than any other cause. There is no effort being made to increase the supply, as foreign labor is practically unknown in this section. We think the supply will eventually work out to be equal to the demand.

No Difficulty in Finding All Labor Needed.

J. W. Biles, Biles Drier Co., Louisville, Ky.:

We are happy to say that we have found no difficulty in securing all of the labor, both skilled and unskilled, that we need, and from inquiries among our neighbors we believe the same condition prevails throughout this section. Labor conditions here have always been very satisfactory and less troublesome than in most of cities the size of Louisville.

Influx of a Good Class of Foreigners Favored.

R. M. Turpin, National Roofing & Supply Co., Louisville, Ky.:

Laborers are scarce at \$1.75 to \$2 per day, whereas two years since the prices ranged from \$1.25 to \$1.50 per day of 10 hours. Business, the general industries, is very seriously retarded—first, by the scarcity of labor; next, the general disinclination to work. There are no special efforts being made to stimulate the labor nor to increase the supply, and there would be no need of effort, for the idle negro is, was and will always be idle, indifferent and improvident. The above refers, of course, to negro labor, upon which we mainly depend. Of the probably 8000 negro laborers "infesting" this community, about 5000 may be depended upon to labor occasionally and 2500 as faithfully performing their duties. Both the individual laborer and the mechanic are in a general sense inefficient and unsatisfactory. These are likely to so remain. In a country where nature has provided a generous soil these conditions would remain unaltered. There are few foreign laborers among us. Note that the skilled immigrant mechanic is an adept in imitating the slovenly work of the native, and, finding that we generally accept indifferent work, becomes himself inefficient.

Now, not to appear pessimistic, we add that business prospects were never brighter. Our city is forging ahead at a wonderful pace. Never before in its history have so many industries been established. Money is easy, times are good and the crop prospects fairer. As to what is needed for a labor supply, from general observation we suggest the influx of a good class of immigrants. A close observer would soon discover that the foreigner is slowly but surely supplanting negro labor in Louisiana, South Carolina, Florida, Alabama and Georgia. The "educated" negro, unfit for labor, is crowding into the Northwestern States, and hereby hangs a tale, and a long tail.

To Secure and Hold Good Labor.

Alfred M. Quick, water engineer, water department, Baltimore, Md.:

I presume that your circular-letter of June 4 in regard to labor conditions is intended to secure information principally in the States south of Maryland. We have experienced no shortage of labor supply, either skilled or unskilled. This fact is no indication as to the labor market, however, as we pay higher wages and have shorter hours than prevail in private corporations or manufactories. My opinion as to the efficiency of the individual laborer or mechanic being greater or less than formerly would be of no value, because, on account of the extra inducements offered in pay and hours of work, we can get our pick of both mechanics and laborers, getting quite a number of efficient men away from private corporations. As to what is needed to increase the supply of labor and add to its efficiency, I believe that the main essentials to that end are as follows:

1st. Proper sanitary environment to work in as far as possible, well-lighted and ventilated rooms, with all toilet arrangements which are usually provided for clerks and higher grades of employees.

2d. Arrangements to protect the men from heat and cold and exposure as far as possible, even to the extent of stopping work entirely in the hottest hours of hot days for men working in the sun or near furnaces.

3d. Cheerful surroundings in the shape of well-kept and ornamental grounds, everything to be spotlessly clean, at least.

4th. A more liberal spirit in allowing men time for illness or injury or other unavoidable absence for short periods.

5th. A system of graded work and promotion that gives men something in sight to work for.

I beg to say that as far as possible all of these principles were adopted by me six years ago when I assumed this office, and there is no question but that the results have justified the means, even from an economical standpoint.

No Trouble.

Foster Bros. Manufacturing Co., Baltimore, Md.:

We have no trouble in this plant in securing unskilled labor. The skilled labor which we use is of a class which is somewhat restricted throughout the country, but owing to the fact that we are in a sufficient enough position in this market to practically guarantee constant employment, we have no trouble in securing a sufficient supply to meet our requirements. We have no experience with foreign labor whatever.

For Reciprocity With Canada.

E. Van Noorden Company, sheet-metal work for buildings, Boston, Mass.:

We do not find any particular shortage in labor in New England. The high tariff and lack of reciprocity with Canada have a tendency to keep down building enterprises. Probably nowhere in the country are building conditions more conservative than in New England. Labor which we have is mostly foreign. Herein again the so-called protection of home industries means the elimination of the American tradesman. We would say that there is no particular need of additional labor in this part of the country, nor will there be until reciprocity is established with Canada and a general boom of trade thereby insured.

Much Depending Upon Good Crops.

H. M. Brewster, treasurer Millett Core Oven Co., Brightwood, Mass.:

At present there appears to be in our foundries a shortage of good labor, and the demand for workmen is greater than the supply. Whether this will continue or whether it is owing to the general prosperity and good business all around we are unable to state. In the writer's opinion, if the good crops of last year are as large this year we shall have the largest business ever known.

Benefited by Loyalty of One's People.

Morse Twist Drill & Machine Co., New Bedford, Mass.:

The best of labor is always hard to get. We have, however, been fortunate in being very much benefited in that direction by the loyalty of our people here and the growth of young men in our neighborhood who have been willing to grow and perfect themselves in our particular line.

No Trouble in Obtaining Ample Labor.

H. A. Besse, Victor Manufacturing Co., Newburyport, Mass.:

It seems to us the situation you desire information upon applies to the South, and not to this locality, for as far as we know there is ample labor here and no trouble in obtaining it. Your circular booms Southern manufacturers, but does not appear to devote much space to we poor Northern manufacturers who are competing with them. Wouldn't it be a good scheme to give us a good word once in a while, as Southern and Western manufactured goods have never yet been able to compare in quality with those of Eastern manufacturers? This is especially so in the line of building materials, which we think the majority of those who use them will testify.

For a Better Understanding Between Manufacturers and Laborers.

Lewis T. Kline, Alpena Industrial Works, Alpena, Mich.:

In this locality all branches of business are exceedingly active, and there is a good demand for labor; however, there appears to be an adequate supply, and I know of very few people hunting for employment. As to skilled and unskilled labor, there seems to be a sufficiency. As to the quality of skill, I believe that the average is as good as I have known in Michigan for the last 25 or 30 years. My impression is that there is an abundance of labor all through the country for the demand of the times. I think there should be a better understanding between manufacturers and their laborers, and that contracts for the employment of labor for longer periods of time would do much to quiet the discontent, as people laboring for wages under a time agreement are more apt to be satisfied than those whose term of employment extends from day to day or week to week. I am trying to keep up my supply of skilled labor by training apprentices under four-year apprenticeship contract in the place of hunting from place to place or inducing skilled mechanics to leave employment of other firms, and I believe that is the only thorough way of keeping up the supply of skilled mechanics in the manufacturing plant. It is disastrous to take on an apprentice in any other way than on a three to five-year contract. I believe a four-year contract is right. I keep back a certain amount on the start and pay them a good premium if they stay out their contract time.

Little Effort to Increase the Supply.

John B. Lindsey, superintendent West Pascagoula Creosoting Works, West Pascagoula, Miss.:

The labor supply in this territory is inadequate for the needs of the industries in this district. Little effort has been made to increase the supply of laborers by bringing in foreigners in this territory. We need most urgently industrious immigrants—Swedes and Germans preferred.

New Labor vs. New Industries.

James Inglis, secretary-treasurer American Blower Co., Detroit, Mich.:

We have suffered to a certain extent from the shortage of labor resulting from the unprecedented prosperity which our country is now enjoying. We have not suffered to any considerable extent in the matter of common labor, but very often have difficulty in finding sufficient skilled mechanics to answer our requirements. This is due to a local condition which is easily explainable, there having been a large number of automobile factories established recently in Detroit, as well as other large industries employing high-class mechanics, which has made an excessive demand for such labor in our city. The writer, as president of the Detroit Board of Commerce, is brought in contact with this difficulty in a more general way, and knows that on the part of manufacturers employing large numbers of unskilled men and women there is much difficulty experienced. In a number of instances the output of large factories has been curtailed during the past year simply on this account. We have in our Board of Commerce a committee on new industries, which committee is supposed to give its attention to the securing of new industrial plants, and the work of this committee in the past has met

with marvelous success. There are some of our members now who feel so keenly the need of more labor that they are suggesting that this committee, instead of interesting new industries, should turn its attention to the diverting of a large number of the right kind of immigrants to Detroit. Many also feel that our laws should be changed so that, under proper restrictions, it might be possible to contract for labor in foreign countries. Individual manufacturers in our city have resorted to various means to supply the shortage referred to, but there has been as yet no concerted action along this line.

More Technical Schools Needed.

A. A. Boutell, president Detroit Graphite Manufacturing Co., Detroit, Mich.:

The city of Detroit has become a very large manufacturing center. Many factories have located here because of the peaceful relations existing between labor and capital. Compared with other large cities, there is very little friction here between these two forces. The very large increase in our manufacturing enterprises has made a demand for additional labor, but this demand has been very fairly met by the continued influx of foreigners. Our own experience has been that we have been obliged to pay higher wages to those of our employes who are competent, and to have more frequent changes among our helpers. We have always been able to get a fair supply of help. Our employes are treated well, and we have done everything possible to make their surroundings healthy and pleasant. Owing to the fact that organized labor is opposed to an apprentice system to any extent, skilled labor is restricted and its ranks are often recruited from the laboring class. In our opinion, we have need of more technical schools in this country. These schools should be fostered by the State or municipality, and should be so conducted that the students would acquire actual mechanical experience. Germany has done wonders with its technical schools, and we can well imitate the example. We have no knowledge of the conditions in the South, except from what we read. As we understand it, the Southern States are about to inaugurate a well-defined plan of inducing immigration. If these immigrants are well treated and their condition becomes favorable it will cause large numbers of their fellow-compatriots to locate in the same place. The foreign element seems to be increasing and multiplying rapidly in favorable localities. We have in Detroit a very large number of Poles, Italians and Germans.

Involving a Presidential Election.

Jas. P. Armstead, secretary and general manager Dake Engine Co., Grand Haven, Mich.:

Nearly all the factories in our city are wanting more laborers, both skilled and unskilled. We cannot help from believing that the individual laborer and mechanic both are more efficient than formerly, and the only thing that we can attribute the change to is the very large increase in demand for the goods over the increase in workmen to supply these goods. Efforts are being made by several concerns here to get more laborers from adjoining towns, but they seem to be in about the same condition that we are here. The only remedy that we can think of, with the extremely good times that we are having now, to give us plenty of laborers is to elect William Jennings Bryan for President.

No Shortage in Numbers, But in Quality.

Walton Stone Machine Co., Kansas City, Mo.:

We hold very pronounced views on this subject, and feel very clear that our conclusions are correct and fair. In this city the condition is this: We have too many laborers and mechanics for the business of the city, yet it has become impossible to secure the service of either which can be depended upon. Our condition is as bad as it should be if actually short 50 per cent. of the needed amount of such help. The individual laborer or mechanic (the average) is far less efficient than he was a few years back. There is no shortage in numbers, rather an excess, but the shortage in quality is astonishing. We do not observe that this condition brings in any more foreigners, but we do observe that such foreigners as do come almost immediately drop into our "civilization" and do as the native Americans do. It is comparatively easy to make contract for labor to report at stated time and place for work and wages agreed upon, yet after this contract is made the employer hardly expects his "help" to report for work as agreed, especially if some ball game is in progress or any other amusement that proves attractive. We account for this remarkable condition in the fact that a large percentage of this class of men are members of this or that "union," which protects them in idleness and inefficiency by dictating to employers what they may do, when, on what conditions and terms, the price and everything else without regard to the actual value of the man. Legislation from the highest to the lowest has favored and built up this condition. State, county and city officials, governed largely by existing laws, and still more by the politicians' considerations of policy, foster and encourage all the abuses of labor organizations. With all the abuse of the colored laborer, it is our experience that this class of labor is far more reliable and valuable than is that of the white man. As to the remedy, the only course that recommends itself to us is to ignore all labor organizations in employing help. Promptly discharge any employe who attempts to dictate anything in regard to your business. This course guarantees the enmity of the "union," and if they can accomplish it will ruin your business, but it strikes us that every employer must accept this risk before he can hope to restore natural and proper relations between employer and employe. Another part of the explanation of this condition is, these labor unions have pushed up the wage scale so high that men are not compelled to work constantly, but may work two days and lay off four. The indolent make the most of this opportunity to "rest." Neither the employer nor the employe does as well as when the general wage scale was 25 per cent. lower than now. We would be glad to find ourselves mistaken in this discouraging view of the situation, but so far find no better outlook than we have described.

Unionism as a Smotherer of Ambition.

Peter B. Gibson, secretary Scott Manufacturing Co., founders and machinists, St. Louis, Mo.:

The situation in our section regarding labor supply is like it is in most States, more skilled than unskilled. There seems to be a very normal condition at present, although in a great many lines, especially the bricklayers', carpenters' and builders' line, there is a decided shortage. The individual laborer is undoubtedly more efficient than he was formerly, but this can hardly be attributed to a healthy aggressiveness on the part of the mechanics, but more attributable to the foreman who has them in charge than to the individual. Of course, it is useless to say that when a man belongs to the union his idea is to simply work his 9 or 10 hours a day, get through and go home. Naturally we can best judge from the machinists' standpoint rather than from a general viewpoint

of the situation, but there is practically no ambition whatever among union men, and the men that are making the mark for themselves today in the different shops throughout the country are the men who are working with an eye to the future, the majority of which class is made up of non-union men. For the skilled lines of labor there is no evidence of the importation of foreign labor, but for manual labor, such as contract work, street work, brick plants, coal plants and other similar lines, the infusion of Italians and Greeks is quite noticeable.

We cannot say that we believe that there is any way whatever to increase the supply of labor but through methods being employed already. If the foreigners are to be imported, it is by far better to have them rather than to have a labor-ridden country. The demand for labor has to be met, and although it is reported that the immigrants into our country represent the offscouring of other nations, we cannot help but believe that since America has been a free country, and so long as America remains a free country, this will undoubtedly be the case. In order to increase the efficiency of labor there seems but one possible means in sight, and that is, through trade and industrial schools. "A little learning is a dangerous thing," and this applies as well to technical knowledge as it does to other branches of learning. Therefore the poor citizen of today, with the ideals and environments of a more enlightened tendency among the working class, cannot help but be a staunch American citizen 20 years from now. We cannot choose our immigrants, but we can educate them after they get here, and this is more than any other country on the face of the earth essays to do. It is needless to say that a law should be passed which prohibits the use of liquor at any and all times during working hours. The immediate outcome of this would be perhaps disastrous in many lines, but if carried out rigidly by law much more businesslike and systematic results can be obtained. This is fired at random.

Unprecedented Prosperity a Dominant Factor.

Geo. E. Long, secretary Joseph Dixon Crucible Co., Jersey City, N. J.:

We find it difficult to get full supply of labor, either skilled or unskilled. Naturally business and industry are thereby restricted. We attribute this condition to the fact that the demand is greater than the supply; that the demand is great because of the unprecedented prosperity that at the present time rests upon the country. New fields are opening for labor that probably did not exist a few years ago. The farmer is paying a great deal more now for his help than he did a few years ago. At our graphite mines at Ticonderoga, N. Y., we have always had more or less difficulty in keeping our miners during harvest times, and within the last two or three years there has been an increase of harvesting and greater difficulty in keeping our men; in fact, during harvest time such excellent prices are offered by the farmers that it is, practically speaking, impossible to keep a man in the mine. In the winter, of course, they are glad to get back. Efforts have been made by us in our mines to make use of foreign labor lately arrived in the country, but they soon get wise and imbued with the spirit that seems to be in the air, and they want more pay and are liable to wander off looking after it. If there should come a reaction and dull times come again upon us, as in 1893, then we probably would have more labor than employment. The Dixon Company is simply doing its best, treating its men in the fairest way possible and trying to impress upon them that there will always be for them steady and continued work at fair pay, and at the same time the Dixon Company endeavors to get its employes interested in the company and to do the best work that is in them. The Dixon Company does not always succeed in holding its men, but in the main it does.

So far as young labor is concerned, that is, boys and girls of 16, 17 and 18 in factories, they are more difficult to get than heretofore, and so far as office boys are concerned, they are not only more difficult to get, but are more uncertain and worthless than they were a few years ago, when they took positions as office boys with a view to working up in the concern to better positions. This is the complaint that comes to us from other firms, from banks and other concerns generally.

Young Americans Shunning Work That Sells Them.

Woodhouse Chain Works, Trenton, N. J.:

What we say below applies only to our own particular trade, that is, chain-making. The situation in this section as to the labor supply is such that we cannot secure sufficient hands to keep our forge fires in full operation. We could use in our own factory at least 10 additional mechanics, so you can see our production is somewhat restricted by the shortage of chain-makers. There are plenty of unskilled laborers in the city who prefer to work for \$1.25 to \$1.50 per day rather than to take up with any industry where physical labor is required, even though the remuneration be 33 to 50 per cent. more than laboring wages, with less hours of labor. In one branch of our business we are gradually teaching young men, and the only way we can secure mechanics in this line is to keep young men in the factory and start them to learn this branch of chain-making, which is machine-made chain, which can be learned by any young man or ordinary person in 6 to 12 months, and he will be at the end of that time of sufficient proficiency to earn \$10 to \$14 per week. The independent laborer is not any more efficient now than formerly, but we notice among a certain portion of the workmen a spirit of carelessness, or probably the word heedlessness would be a better one to use, and of this trait we attribute the cause to the labor unions growing with such strength as they have attained during the last three to four years of unusual prosperity. It is useless to endeavor to bring foreigners in for this branch of business. In our high-grade chain business the best workmen come from England, and we would state the social and business situation there does not warrant chain-makers migrating to this country at the present time, neither has it for the last six years. Occasionally one or two come over to see the country, and some few stay, but not sufficient to keep pace with the increase in business.

As to what, in our opinion, should be done to increase the supply of labor, etc., this is a problem that needs careful consideration, and we would not care to say offhand what would be the best for the interest of the country and our trade. At the present time, with the general prosperity throughout the country, naturally labor gets more independent, as almost all branches of business are requiring additional mechanics, and a great many trades can secure considerably larger remuneration than is obtained from their own vocation. Our high-grade chain-makers, so far as Trenton is concerned, have secured 40 per cent. increase in wages since the year 1897, and the machine-made chain-makers had an advance in their wages of about 15 to 20 per cent. The best way, in our opinion, to attract new men to certain trades is to pay high wages. But we fear this will not be an incentive excepting to foreigners, such as Germans, English and Hungarians, as we find the young men of American birth and ancestry prefer to leave

the physical labor positions to other people and take lower wages in other lines where they do not come in contact with dirt of any kind.

The Grog Shop and Saloon Contributors to Inefficiency.

O. J. Fowler, secretary Osgood Scale Co., Binghamton, N. Y.:

There seems to be a fair supply of labor, skilled and unskilled, in this section, but it would be a great deal better for most of the manufacturing concerns if they had more skilled labor. We consider that the individual laborer or mechanic is less efficient than formerly. We attribute the change to the fact that the present generation have not learned trades and are incompetent to do a general line of work. They have been trained to do just one thing. We consider that the "grog shop" and the saloon has as much to do with the inefficiency of laborers and mechanics as any one thing that we can mention. We consider that what is needed more than anything else to increase the labor supply is for every manufacturer to run an open shop, with no restriction of apprentices, by bringing into this country the best class of workmen possible, cutting out the worthless element that is being flooded into this country every month.

Good Men Hard to Find.

John T. Burr & Sons, keyseat milling, broaching and cold-sawing machinery, Brooklyn, N. Y.:

We have felt the scarcity of efficient help for the past year or two. There is always plenty of labor to be had in such a large city, but good men are very hard to find.

Practical Plan to Make Foreigners Competent.

David Bell, vice-president and general manager David Bell Engineering Works, Inc., Buffalo, N. Y.:

We believe in the immediate territory in which we are situated there is more or less shortage of skilled labor, and we believe that this affects in any such locality the output of manufacturing concerns, as much more capital would be used in manufacturing lines provided that labor could be obtained to utilize same. We believe that the individual mechanics of today are less skilled than formerly, but this we attribute to the natural course of events. As manufacturing is carried on today in large quantities, the result is that individual men are kept at the particular work where they show the greatest efficiency, and while they are less skilled than formerly, the developments in machinery have largely increased the daily output. We believe that quite a large proportion of the unskilled laborers could be turned into skilled mechanics, and by this we refer to foreigners who come to this country in large numbers. The present difficulty seems to be with most of them that they do not take the trouble or have the chance of learning the English language quick and soon enough, and we believe that it would largely better these conditions if there were some arrangements made in the larger cities and towns, where it is practical, to have night schools with competent instructors to teach these foreigners simply the English language, or at least to give them a start in this direction, as very many of them are bright and intelligent to pick up the language if they only had a start in the right direction.

Results of Too Short Apprenticeship.

A. E. Huckins, superintendent Abendroth & Root Manufacturing Co., Newburgh, N. Y.:

The labor conditions in this section of the country are extremely aggravating. With the extreme shortage of unskilled labor, the skilled labor is not what it should be. In the writer's opinion, the practice of allowing a man to spend so much time in a shop as an apprentice and then terming himself a mechanic long before he is the same is accountable for our inefficient men. The laboring man seems to infer if he has spent a certain time at a trade, no matter whether he has the general experience or not, that he is a mechanic in that line. If there are any efforts being made to supply labor in this section of the country, other than individual efforts, we are unaware of the same.

Specialization as an Improving Influence.

G. W. Fuller, manager A. S. Cameron Steam Pump Works, New York, N. Y.:

We consider your inquiries and request important and timely, and will endeavor to answer them in the order given. While we are not in position to speak for all employers in this section, we have reason to believe that our experience is in keeping with that of others here, and conditions are apparently the same with all. While the supply of unskilled labor is considerable, and in volume apparently ample to meet demands, yet the quality is deficient and requires constantly the process of elimination. On the other hand, there is a scarcity of skilled labor for foundry and machine shop, and only procurable at maximum rates of pay, the inexorable law of supply and demand governing in this as in other matters. If the efficiency of the operative is determined by increase in output we would say that it had improved; but, in our opinion, the improvement in mechanical appliances has had most to do with increased efficiency and output, always making due allowance for supervision and management. Specialization of the work and the designing of special machinery and tools and the education of operatives as specialists has also resulted in an increase of output. We know of no special efforts being made to increase the supply of skilled labor, but there is an enormous increase by immigration in the quota of unskilled and partly skilled labor. In our opinion, what is most needed in this country to increase the supply of skilled labor and add to its efficiency is a radical increase in the number of native apprentices and a more thorough system of education for them.

A Scarcity of Help That Wants to Work.

Chas. Mundt & Sons, manufacturers of perforated metal, New York, N. Y.:

One can judge for himself conditions leading to the unsatisfactory results obtained in the employment of skilled labor. Many mechanics when given a trial are not up to requirements of the position we have to fill, and we often get better results by employing intelligent young men and teaching them to fill positions we have open. This, of course, requires time and patience, but the result is generally good. We have little trouble in getting good help unskilled. We do not think the general average of mechanics are as efficient as formerly. One great reason is, too few boys are allowed to learn trades. There is no scarcity of help, but a scarcity of help that want to work. No effort is being made to obtain more foreigners that we know.

Some Complaints of Difficulties.

Julian Scholl, president and general manager Julian Scholl & Co., Inc., manufacturers of road-making machinery, New York, N. Y.:

We have had no trouble in securing such labor as we need, both skilled and unskilled, but some of our customers here in New York have complained that they find it very

difficult to supply their needs. This related particularly to engineers needed for running steam rollers, etc.

Workingmen's Fallacies About Machine Tools.

F. H. Stillman, president of the Watson-Stillman Company, hydraulic machinery, New York, N. Y.:

In our section and in our line of business there is a shortage of labor, both in skilled and unskilled, and naturally business is restricted by such a condition. I think this extends through all of the manufacturing concerns in this section. I consider that the average applicant for employment claiming to be skilled does not compare with what we formerly had. This is largely the result of specializing men in individual shops. A man will be placed at work on a certain tool or certain kind of vise work and maintained there for a considerable number of months, and will be a specialist, but naturally men who are more generally skilled will get higher wages, and when he finally gets a little sore that he gets less than the best, leaves and then seeks employment as a competent mechanic, with the result that he cannot make good in any other shop, and having disgusted his former employers, they will not be likely to re-employ him and he becomes a floater, and in many cases, if he has a good flow of language, he becomes a general disturber, worrying over conditions which he does not understand.

I know of no efforts whatever being made to properly instruct young men on any extensive scale, nor do I know of any effort being made toward the importation of laborers. We ourselves are more willing to break in a man who has fair intelligence than to accept a foreign workman, who has to be broken into American ways and conditions, and having to teach him to understand English as applied in the shop. The important machine tools and machinery general I believe to be the one means available of keeping up with the rapid expansion of business. An unfilled requirement is always an incentive to the man who knows what is wanted and has the ability to produce it. The one opposing feature to this is the feeling which has been engendered in the average workingman that he is robbing somebody when he will let a machine tool do what it is capable of doing, and to believe that when the machine is doing its duty they are working harder, and this idea is industriously promulgated through all the walking delegates.

Tools Adding to Individual Efficiency.

Niagara Falls Metal Stamping Works, Niagara Falls, N. Y.:

The supply of labor, skilled and unskilled, is ample, but prices are high, especially for that of the highest skilled labor. Individuals are more efficient, because they are handling more efficient machinists' tools. Where union labor is largely employed, its well-known and openly-avowed purpose to restrict the output tends directly to inefficiency. It could not possibly be otherwise. There is no effort to bring in foreign labor. Our own experience is that Italians, Syrians and Russian Jews become first-class, reliable factory workers where extreme skill is not necessary. To increase the supply and add to the efficiency of labor it is necessary to pay fair wages, treat the help well, give them good conditions, the best machines and tools to work with, and not to be afraid to commend a good job or a quick one, and to emphasize your appreciation occasionally by an extra half-dollar or more. Make every effort to give help steady employment, and discharge promptly anyone found to be a drinker, mischief-maker, unreliable or constitutionally inapt.

No Trouble in Getting Necessary Help.

Allan Herschell, president Herschell-Spillman Company, improved riding galleries, North Tonawanda, N. Y.:

We have not experienced any great inconvenience on account of shortage of help. We could have used a few more machinists if we could have gotten hold of some thoroughly first-class ones, but have been able to keep our works running along very satisfactorily, notwithstanding this little shortage. Aside from this, we have had no trouble to get any help necessary, both skilled and unskilled. In regard to the efficiency of our employes, will say that we have found them very satisfactory in this regard. There will, of course, occasionally a man get in the shop who is not as quick a workman as others, but in the main we have found them efficient help. We do not see that there is any material change necessary in order to keep business moving along nicely.

Training Up One's Own Workmen.

O. S. Humphrey, treasurer Warsaw Elevator Co., Warsaw, N. Y.:

We use practically all skilled labor, and up to the present time have had no trouble in getting all the skilled workmen we required. Possibly one reason for this is that we teach their trade to nearly all of our workmen; that is, start them in as apprentices, and then they stay with us, and after an apprentice gets his trade with us he nearly always stays. We consider our mechanics more efficient than formerly, and we attribute the cause to their long experience.

The Intelligence of Mountain Labor.

Charles E. Waddell, consulting electrical engineer, Biltmore, N. C.:

It is very difficult to secure either skilled or unskilled labor in this vicinity. Unskilled labor is at a premium, and efforts are being made by several concerns to import this class. The mountain laborer is the best class of laborer with which I am acquainted. He is intelligent, industrious and honest, and is becoming each year more and more efficient, due to the broadening influences of education. In only one instance do I know of an effort on a large scale to import foreign labor, and this in the case of a railroad contract. Your final query is rather broad in its scope, but, in my opinion, it would be desirable to take steps to import the best class of foreign agriculturists, probably those from Northern Italy, some people who love and are satisfied with farming, who would replenish the ranks of the plantations, and, besides increasing the agricultural products of the South, would also make it possible for numbers who are now farming to turn their attention to industrial pursuits.

Available Labor All Employed at Present.

S. B. Sargent, general manager D. A. Tompkins Company, manufacturers, engineers and contractors, Charlotte, N. C.:

The supply of skilled and unskilled labor is insufficient, and industrial development is seriously retarded because of this insufficient supply of both skilled and unskilled labor. Regarding the efficiency of the individual laborer, our present belief is that there is no difference in this respect. However, the available labor is all employed at present, which means that we are now using the tailings and scrap ends, with the consequent complaints and troubles. With a sufficient supply of good labor many who are now employed would be out of work, and, in our judgment, it is this latter class of labor

that has caused the statement so often heard, that our labor is less efficient than formerly. There is no serious effort being made to increase the supply by bringing in foreigners to our section. To increase the supply of labor all that is necessary is to secure for this section a few pioneers from the large number of immigrants who are now coming to this country. We do not think that these pioneers should be secured at the port of entry, as a large percentage of the immigrants have made up their minds where they were going before they left the old country, and are undoubtedly going to the neighborhood where their friends and former acquaintances are located. Those who land in this country without an ultimate destination in view are, in our judgment, liable to be floaters and unsatisfactory settlers.

Labor Shortage a Serious Matter.

A. H. Washburn, cotton-mill machinery and equipment, Charlotte, N. C.:

As far as my observation and experience goes, the shortage of labor in all kinds of manufacturing, including cotton mills and cotton plantations, is becoming a very serious matter in nearly all sections. The labor supply in this immediate section is short. We need more laborers, and the same is true in other States which I visit frequently. At the American Cotton Manufacturers' meeting in Asheville in May the statement was made that about 25 per cent. of all the spindles in the South were stopped on account of labor shortage. I think this is exaggerated somewhat, though there is no doubt a large number of spindles standing for the reason mentioned above. As a rule, I think the individual laborer or mechanic is more efficient than formerly, and I believe becoming more so as time goes on. I know of no concerted efforts that are being made to increase the labor supply in this vicinity by bringing in foreigners. I am advised that a brick manufacturer in this section has had about 30 or 40 Italians come South soon after they landed in New York to work in the brickyard, and I am told that they are doing well and making good laborers.

Hard to Get Good Dependable Men.

Ford Roofing Co., Greensboro, N. C.:

We have no trouble to get all the unskilled labor we can handle, but cannot get any mechanics. They have been spoiled so that they are very unreliable, and we cannot depend on them to do anything if they take a notion to change. It is very hard to get good, reliable men that can be depended on.

Almost Every Workman Can Secure Some Kind of Work.

Wm. Clerkin, president and general manager XXth Century Heating & Ventilating Co., Akron, Ohio:

There seems to be a sufficient number of skilled and unskilled labor in this section, although there are not many idle men; in fact, almost every workman can secure some kind of work. We attribute the supply of common labor to the fact that there has been a large immigration of foreigners into this section that have been doing the cheaper class of common labor, tending rather to a surplus of that kind of labor, and the American-born people have turned their attention to the trades and arts, thus making up any lack that might exist in those particular trades. We think that there is less efficiency than in former years, owing to the good times and prosperous business conditions existing over the country during the past several years. The job rather looking for the man than the man looking for the job has produced a certain amount of independence on the part of the employed. Also in a great many sections, owing to the supply of labor, they are reducing the hours of labor from 10 to 9 and from 9 to 8 hours per day. This is being urged and influenced largely by the labor unions, as their tendency is to have a man accomplish as little as is possible; in other words, a maximum of pay with a minimum of work. For the Southern States what we think you need is to have a large percentage of the immigration from the foreign countries that is now landed on the eastern coast of the United States diverted to the seacoast cities, which will more nearly equalize the influx of population now coming to the United States.

Scarcity of Skilled and Common Labor.

The I. & E. Greenwald Company, engineers, etc., Cincinnati, Ohio:

There seems to be at this time in this city a great scarcity of skilled and common labor. This has reference to molders, machinists and common labor such as we use about a works of our character.

Handicapping a Tremendous Development.

Henry B. B. Yingasoll, Rogers, Brown & Co., pig-iron and coke, Cincinnati, Ohio:

Rogers, Browns & Co. only employ office help, and of this there is a good and efficient supply. Our furnaces, however, at various points, and particularly in the South, are and have been for some time past very badly handicapped for want of labor, and there is every prospect, as far as we can gather, that this unfortunate condition of affairs is going to continue. The writer has just returned from a six weeks' stay in the Birmingham district, and was impressed only too well with the sad lack of skilled and unskilled labor in the South, handicapping, as it is, the tremendous development which is bound to take place there.

Men Anxious to Do as Little Work as Possible.

K. F. Snow, general manager C. O. Bartlett & Snow Company, manufacturers of mill and labor-saving machinery, Cleveland, Ohio:

In our section we find shortage in both skilled and unskilled. We are unable to procure sufficient men for our requirements, that is, men who are willing to do a good day's work. We have in our shop no established wage for any class of machinist, endeavoring to pay in proportion to service rendered. We find quite a number of men asking for work, most of whom, on trial, seem to be anxious to do as little work as possible. In reference to foreign labor we find the per cent. of this class of labor increasing in our shop, seemingly from the fact that we are unable to obtain enough Americans to supply the demand.

Simply a Question of Management.

M. Cokely, general superintendent Lima Locomotive & Machine Co., Lima, Ohio:

In this section, and particularly this locality, 75 per cent. of the trades as represented in our service show an ample supply, while 25 per cent. show a shortage, which we find comparatively easy to supply from the outside. We have unskilled labor in abundance, and, judging by our own experience, there is no restriction to business or industry on account of the shortage of either. Judging by our standard of efficiency, which is based on productive capacity alone, we should say that both the individual laborer and mechanic are much more efficient than formerly. This is due to the more perfect facilities with which they are supplied. We have no knowledge of any efforts

to increase the supply of labor by bringing in foreigners. In general, when properly distributed and trained, the natural increase in population will always be sufficient to take care of the expansion of the world's industrial interests. Among the millions of unskilled workmen there is an abundance of material from which can be developed a large portion of the skilled and all of the partially skilled help required in manufacturing. A very large portion of such help, through lack of opportunity or circumstances over which they have no control, have failed to become skilled through the usual apprenticeship channels, but are nevertheless just as ready to respond to the guiding hand of enlightened management as the barren prairies were to the plow of the pioneer, and all that is necessary is to offer sufficient inducement to effect migration. All else is simply a question of management.

The Open Shop an Absolute Necessity.

J. A. Jeffrey, president and general manager Jeffrey Manufacturing Co., Columbus, Ohio:

Labor is plentiful here. The individual laborer, when left to his own independence and self-respect, accomplishes more than formerly, but if handicapped by modern trade-unionism, not nearly so much. In order to increase the supply and efficiency and to build up the world's industries, the open shop is an absolute necessity.

All Concerns Crowded Beyond Capacity.

W. B. Anderson, secretary Buckeye Iron and Brass Works, Dayton, Ohio:

We have experienced considerable trouble in securing competent mechanics for our work, and at the same time it seemed almost impossible to secure even unskilled labor. We attribute this to the fact that all concerns, not only in this section of the country, but elsewhere, are crowded beyond their capacity with orders, consequently there are no idle men to be had. There are only one or two firms in this city who use foreign help extensively. In order to increase the supply of efficient mechanics, shops in general should demand more apprentices to learn the trades, and not be governed by unionism, as it is hard to get a sufficient number of mechanics where the unions endeavor to prohibit energetic young men from learning trades.

Could Double Output With Skilled Help.

C. W. Bender, secretary and manager Wilson Laundry Machinery Co., Columbus, Pa.:

There is not enough skilled labor in our section, and our business is less on account of the shortage. We could double our output if we could get the skilled help. We consider the individual laborer and mechanic more efficient than formerly, and attribute it to their being more intelligent. We do not know of any efforts being made to increase the supply, except that we are continually advertising ourselves, and others are doing the same. We have no solution to offer to better the conditions.

Labor Unions Could Induce Efficiency.

H. B. Stauffer, secretary and treasurer Monitor Steam Generator Manufacturing Co., Landisville, Pa.:

If you refer to the situation in our part of the country, will say that the supply of both skilled and unskilled labor is far more scarce than it was several years ago. As to whether the mechanic is more efficient or less so, we hardly think there is any great amount of difference. Some are better and some are worse, as has always been the case. The railroad companies in this section are importing foreign labor to take the place of shortage of American labor. Just what is needed to increase the supply and add to the efficiency of labor is something that we have never gone into very deeply, but we think that the labor unions themselves, where they are strong, could make better mechanics by being more strict in their examination, and where they are not, the employers should insist on better workmanship.

See Few Unemployed on the Streets.

Thos. P. Conard & Co., steel rails, railway equipment, etc., Philadelphia, Pa.:

As we are not employers of labor to any extent, we are not in a position to answer your questions very intelligently. We believe, however, from our observations that the supply is about equal to the demand. Of course, we receive considerable foreign labor here, and also many negroes from the South, but all seem busily occupied, and we see few, if any, unemployed people on the streets.

Overcoming by Introducing Labor-Saving Tools.

E. F. Burns, vice-president Otto Gas Engine Works, Philadelphia, Pa.:

We, in common with other manufacturers, have been handicapped during the past year or two because of the inability to hire sufficient skilled help, and on this account our output has been very much restricted. We believe, however, we shall in a measure overcome this trouble by the introduction of automatic and other labor-saving tools requiring less skill to operate. We attribute the shortage of skilled help to the vastly-increased business all along the line. Our experience with foreign help would not warrant the introduction of such to any extent. We are firmly of the opinion that better and lasting results could be had by paying more attention to the teaching of young men both in the shops and by means of industrial schools.

Placing Human Beings in Charge of Labor.

Morris G. Condon, H. B. Underwood & Co., general machinists, Philadelphia, Pa.:

There seems to be an abundance of both skilled and unskilled help in this vicinity. If a plant wants to run 9 hours or 21 hours a day it can secure all the help required. A few weeks ago one of the large shops lost between 300 and 400 skilled mechanics by strike, and within a few days a local trade association furnished nearly 300 to take the strikers' places. This seems strange, as all the machine shops are busy. The only way we can account for it is that Philadelphia is such a desirable place for the good mechanic to live that they flock here from all parts of the country whenever they hear of an opportunity to secure a steady job. And who can blame them, as there is no place in the world where the worker is treated fairer or where he finds as comfortable homes, and where the "Golden Rule" is not forgotten, than here in Philadelphia.

The mechanic and laborer are both more efficient than formerly, and one reason for this is they are treated more like men than they used to be. They read more than they did (especially the trade papers), and do not spend so much of their time and money in the rum shops. It is a rare sight nowadays to see a good mechanic who allows liquor to get the best of him, and this is also true of the laborers who work in the shops. Education is the principal cause for this. And while, in our opinion, all classes of workmen are more efficient than in former times, their efficiency will increase enormously when they feel in their hearts that they are getting a square deal, and it is up

to the employers to bring about this feeling. No country or no part of a country will enjoy permanent prosperity and contentment where it is the general custom to work factory employes more than 55 hours in six days.

In our opinion, the best way to increase the supply of labor in any line is by eliminating many objectionable features, which in many cases can be done by placing men in charge who are human beings. Let people know that they will be treated fair and that you are going to do everything possible for their welfare in and out of the shop, and you will have no trouble in getting all the help required; but, on the other hand, let it be known, and it don't take long in many places, that the welfare of the employes is not considered in any sense except in so far as the law compels the employer to consider it, then there will be a continual shortage of help. The remedy for this is in the hands of the employers.

American Boys Feeling Themselves Above Labor.

G. B. McClure, S. Keighley Metal Ceiling & Manufacturing Co., Pittsburg, Pa.:

There is a shortage both in the skilled and unskilled, that is, efficient labor. A mechanic, as a general thing, is not nearly as efficient at the present time as he was in the past, and we believe the cause is everything becoming specialized. An apprentice starting at the trade, that is, the sheet-metal or tinner's trade, today does not have the opportunity to learn all branches of the trade that he did in former years. An apprentice boy coming into a shop is usually put at one thing, and becomes expert at that only, and through changes he gets into another factory and is put at a different branch of the business, and he is a failure. The unskilled labor that presents itself at the present is largely made up of the uneducated classes, as the American boy feels himself above labor, and he would much prefer to take \$4, \$5 or \$6 a week and be able to wear a white collar than receive better remuneration for work that requires manual labor and possibly dirty face and hands. Ten or fifteen years ago it was possible to secure bright and intelligent young men who gradually worked into better-paying positions than common labor, but at the present time we are practically unable to secure any of this kind of help. The foreigner does not make a good laborer for factory work, nor does he make a good mechanic. Of course, there are exceptions to the rule.

An Oversupply of Unskilled.

B. M. Root Company, plow-handle machinery, saw benches, etc., York, Pa.:

We find here an oversupply of unskilled labor. We would have no trouble in getting more men than we need for our laboring work. There is a shortage of skilled workmen. Desirable young men are not willing to work for the wages a manufacturer can afford to pay a beginner, who must be taught the rudiments of the trade. Apprentices are also in many cases too young, or do not have the foundation education necessary to enable them to grasp the intricacies of the trade they are learning. We think that a young man should be at least a high-school graduate, and then serve a term of four years as an apprentice. At the end of this time he will have mechanical knowledge enough to become more and more valuable as he gets additional experience. We also urge our apprentices to take advantage of the mechanical drawing and the shop mathematics classes, which are usually conducted by the Y. M. C. A. or similar institutions. By awakening an interest in these matters and getting consensus of intelligent opinion you are doing a great work for the industrial improvement of the entire country. We shall be pleased to assist you in every way possible.

A Great Scarcity of Skilled.

Frank S. Manton, president American Ship Windlass Co., Providence, R. I.:

There is a great scarcity of skilled labor, mechanics of all kinds, patternmakers, machinists, etc. There is an abundance of unskilled labor. We attribute it to the unusual busy condition of all kinds of manufacturing business.

Efforts to Get Immigrants.

W. S. Stevens, general manager Bailey-Lebby Company, machinery and supplies, Charleston, S. C.:

We are not in a position to give you any information in regard to scarcity of labor except through hearsay, as we have no trouble in obtaining such common laborers as we need in our business. We understand that this State, through the commissioner of immigration, Mr. Watson, is making strenuous efforts to obtain foreign labor to take the place of insufficient native labor, and we are sure it will be of great advantage, provided they can get the proper class of immigrants.

Effects of a Shortage of Labor Upon Cotton.

A. M. Gibbes, proprietor Gibbes Machinery Co., Columbia, S. C.:

We have noted for some time a general complaint as to scarcity of unskilled labor, but we have not heard anything of consequence relative to a scarcity of skilled labor. There is a general complaint, especially on the part of farmers, as to the scarcity of hands. We are inclined to think that, so far as the cotton crop is concerned, the scarcity of labor is perhaps a blessing in disguise, as it accomplishes to a certain extent what well-directed efforts have failed to accomplish, namely, a restriction of acreage, which is desirable for obvious reasons. Relative to efforts to increase the supply of labor, we are pleased to be able to say that the State of South Carolina is looking well after this, having established, as you are probably aware, a bureau of immigration, which is doing effective work. It would seem to us that the only way to increase the supply would be to bring in foreigners, and these should be selected from the classes which will prove desirable citizens, otherwise they should be left where they are. The efficiency of labor, in our opinion, rests largely with the employers.

Negro Help Practically No Assistance.

Theo. O. Vilter, president and superintendent Vilter Manufacturing Co., Milwaukee, Wis.:

We fully agree with you, that is, with the reports that you have received, that labor is short everywhere, and especially so in the South. We are erecting a great many ice plants and refrigerating plants in the South, and it is next to impossible to find any kind of skilled labor to assist our erecting engineers, and the common labor in the South is negro help, which is practically no assistance. This necessitates sending skilled labor from here. Where we in the North are sending one erecting engineer, and in the larger towns he can find skilled help to assist him, in the South we have to send four and five men from here to do that work. In the North it is not so bad, but skilled mechanics are also getting scarce here now on account of the enormous demand for skilled labor all over the country. The United States government has taken several of our skilled men to work on the construction of the Panama canal. We just now have a molders' strike, and a lot of skilled mechanics are on the street on account of that strike, and we

are making a good many molders now. What we should aim to get is skilled labor from foreign countries, even if they cannot speak the language; as long as they are good mechanics they are welcome, because they will understand if you show them what is wanted. Of course, it takes a little time to educate them to our way of working, but I find that they get onto that very quickly. Of course, where union regulations are controlling the shops a great many of the foreign people are barred, but that is what we are fighting this molders' union for, and we will have an open shop hereafter.

Last November we took in a young German molder who had a wife and two children. As our foreman could talk German, and as he was willing to work for \$2.50 to start with, we took him in. We, however, cautioned him not to report that to the union, because there would be trouble. Somehow or other they got onto it and fined the poor fellow \$15, and we had the walking delegate in the office complaining about this and stating that we would have to pay that man his full wages. We, however, refused, on the ground that the man was not worth the minimum scale of \$3 the first two months, but we advanced him to \$3.25 per day after five months, not all of a sudden, but by degrees. That shows you that union regulations should be barred from the shops, because the manufacturer is always willing to pay the man what he is worth, and that is what we will now carry out, and maintain an absolute open shop hereafter. You can take out of this whatever you have a mind to.

Not Enough Labor of Any Kind.

Frank P. Milburn, architect, Columbia, S. C.:

There is not enough labor of any kind in this section, and there is a greater shortage of skilled labor, while the mechanical labor is not as efficient as it was a few years ago. I attribute this to failure of young men to apprentice themselves to the different trades. We have too many jack-leg tradesmen who, on account of unions, demand full wages. Some foreigners are being brought here, but the majority of them leave, and I am of the opinion that they do this, thinking they are not treated right. I am of the opinion that what we need to increase the supply of both skilled and common labor is to pay higher wages. The mechanics of the North will not come here and compete with negro mechanics. They object to working with them, and, in addition to this fact, the wages in the South are not as good as they are in the North. The tendency is shorter hours and higher wages.

Most Plants Running Shorthanded.

Morris Sherman, president Morris Sherman Manufacturing Co., Chattanooga, Tenn.:

Common labor is scarce here, and most of the plants here are running shorthanded. Of course, there are good mechanics, and some that are not good. When we find a man not capable and not first-class we just simply let him go. We certainly think that the labor supply ought to be kept on the increase, and we are thinking seriously ourselves of bringing foreigners here from the East in order to get the work out. The main trouble we find here is with the colored help. It is getting so that no dependency can be put in it, and when starting up in the morning we never know how many we have to go to work with; it is therefore very uncertain.

Contracting Work Much Restricted.

W. W. Wallace, general manager Wm. J. Oliver Manufacturing Co., Knoxville, Tenn.:

Throughout this section of the South the labor supply, especially the unskilled, is far short of the needs. The business, such as contracting work, is very much restricted by this shortage. Skilled labor is somewhat short also, and, as a rule, of very poor class in this section. In regard to the efficiency of the laborer or mechanic, the conditions remain about the same as they have been in the past. As a rule, the mechanics of the South are uneducated. Every inducement is being made at the present time to bring the foreigners in. In our opinion, it is absolutely necessary to bring the foreigners in the South to take the place of the negro in the South.

Much Labor Worthless.

James J. Elliott, secretary Nashville Carbon & Oil Co., Nashville, Tenn.:

While we are not employers of labor to any very large extent, yet our experience and observation lead us to answer your questions as follows: The situation in this section as to both skilled and unskilled labor is that both are insufficient for the needs, and business and industries of all kinds are more or less restricted because of the worthlessness of even such labor as can be obtained. We are unable to say whether the individual laborer is any more efficient than formerly, but it is undeniably true that the unskilled laborer is more worthless as a general rule. We attribute this fact to the reason that the unskilled labor in the South is almost exclusively negro labor. It does not seem to have improved in years. We cannot say, since we are not informed, whether there is any effort being made to bring in foreigners or not, but it is undeniably a fact that an increase not only in the supply, but in the efficiency of labor of all kinds, is necessary for the continued upbuilding and material advancement of Southern industry.

Idleness a Man's Own Fault.

W. W. Robertson & Co., North Carolina and yellow pine, Norfolk, Va.:

There is an insufficient supply of good skilled and unskilled labor in this growing city of ours. Wherever you find a man idle in the city of Norfolk or the vicinity thereof it is his own fault, and not because there is no work for him to do, whether he be the most skilled mechanic or the unskilled day laborer. We regard the individual laborer and mechanic in our immediate section more efficient than formerly, as they have been broadened by co-operation and association with some of the best skilled labor that comes from a distance. We know of no concerted action being taken in this immediate section for the bringing in of foreigners to supply the shortage. We believe, however, that if some decisive move was made to import the high class of foreign families who could be settled on the farms in this territory and supply the workshops with their excess labor, that not only would the country from which they come be benefited, but, in addition thereto, the laborer and our section would be helped.

Negro Labor Fast Retrograding.

H. P. Stratton, president Stratton & Bragg Company, machinery, Petersburg, Va.:

No subject is of greater importance to the South at the present time than that of labor. The negro labor, which has never been the best, is fast retrograding, and cannot be depended upon. Aside from this fact, we need more labor, both skilled and unskilled, to fill the needs of this section of the country, whose rapid strides in commercial, mining and agricultural importance is now known to the whole world. If the vast business expansion of the South is to continue, immediate and decisive steps must be taken to secure that important factor in the making up of our wealth—labor. We favor an

"open gate," with proper safeguards, which will bring us an abundance of immigration. The Southern business people should organize at once and have immigration bureaus established, which would secure desirable immigrants for this section. The fact that less than 5 per cent. of the immigration coming to this country last year came South proves conclusively that we are not making any efforts to secure the same. We would like to see Norfolk, Va., an immigrant port. We can offer immigrants as good if not better wages than any other section, and a land which, once ravaged by war and ran red with blood, but now the happiest region of the earth and the garden spot of the world.

No Trouble as to Skilled Labor.

C. F. Cole, secretary Sydnor Pump & Well Co., Inc., Richmond, Va.:

We have experienced recently considerable trouble in getting satisfactory colored labor, having to pay \$1.50 per day of 10 hours for such labor. You are as familiar with the character of this labor as we are, and it is unnecessary to comment on this point. We have no trouble with skilled labor, having had the same force for years. Of course, their efficiency is satisfactory to us. We do not feel qualified to express an authoritative opinion as to what is needed to increase either the quantity or quality of the labor now in the South.

Large Demand for Skilled and Unskilled Labor.

John L. Williams & Sons, bankers, Richmond, Va.:

There is a large demand here for skilled and unskilled labor. We think business and industry is suffering for a lack of both skilled and unskilled labor. We understand the State commissioner of agriculture, Mr. Koener, is now in England making an effort to bring a portion of the unemployed English laborers to Virginia. We think the farm lands are especially in need of reliable English or Dutch farmers who will help to take the place of the negro labor, which has been drawn off from the farms for railroad work, and also owing to the natural inclination of the colored population to move to the cities. As you are aware, the Tidewater Railroad, the Chesapeake & Ohio, the Norfolk & Western Railroad and the Southern Railway are doing and have been doing a large amount of railroad building in Virginia, and the contractors have had agents scouring the farming sections for good day laborers.

Individual Laborers Apathetic.

Henry M. Payne, civil and consulting engineer, Williamson, W. Va.:

The labor supply in this section is very scant, both skilled and unskilled, and every industry is handicapped by this condition. The individual laborer, as a rule, is very apathetic, and I believe this condition is the result of a growing knowledge of his own unfitness to compete with good labor from the outside. In the coal mines many attempts are being made to bring in Hungarians and Italians, and the most successful combination seems to be one-third native, one-third colored labor and the balance foreigners. I have so far been unable to suggest any remedy, for I have seen many instances where the men were well treated and received every advantage which could possibly be offered, yet their rambling habits lead them from place to place, and the tramp printer, painter, carpenter, blacksmith and mechanic is a familiar species. This problem is the worst which we have to face at present.

IRRIGATION AND THE LOUISIANA PRAIRIES.

[Special Correspondence Manufacturers' Record.]

Opelousas, La., June 16.

"On the prairies of fair Opelousas," in this beautiful land of the Acadians, there is being wrought today one of the most notable developments to be found in the South. A transformation is in progress, through proposed irrigation, canal building and present railroad construction, which seems destined to make of this section one of the most prosperous farming regions to be found on the globe. So recent are the activities in railroad building that not until one has been on the ground may an adequate conception be gained of the grid-ironing enterprises on foot that will give to the prairies of Louisiana the appearance of the most favored portions of railroad-crisscrossed Iowa or Illinois. And in addition is the announcement that there is assured to this section an irrigation enterprise that will serve a wider area, and serve it better, than do any of the present irrigation plants of the South, revolutionizing and marvelously wealth-creating as they have universally been.

The railroads now under way will put this section in direct touch with New Orleans, Houston, Kansas City, St. Louis and Chicago. The irrigation canal is to be built along lines that will enable one plant to ultimately irrigate 500,000 acres, on which can be raised not only rice, but well-nigh every other product of the soil, and it is so situated that if need be the waters of the Mississippi river might be diverted to these canals in quantities sufficient to irrigate more than 1,000,000 acres of land. A party of interested Pennsylvania capitalists is now on the ground, and the definite announcement is made that the irrigation enterprise will be put through; that work will begin this fall, and that the

first section will be finished in time for the rice crop of 1907.

It is impossible to give the outsider, through one or even many newspaper articles, an adequate idea of present conditions and future possibilities. Those from the North, familiar with even the best farming sections of Pennsylvania, declare they will hesitate to tell the whole truth when they return home, as their accounts would be considered the Munchausen tales of deluded travelers. Lancaster county, Pennsylvania, which is the home of many of the party now here, is a section of unusual wealth, based on agriculture, so that banks are filled with money and great prosperity is universal. Compared with farming conditions there, the visitors declare it would be mere play to till the soil in this section, where, with constant moisture assured, as it will be with the construction of the irrigation plant, two, three or more crops may be raised on the same ground every year, and this without the use of a pound of commercial fertilizer. Up in this part of the prairies of Louisiana there are no irrigation systems such as have transformed the prairies further south from the cow pastures of less than 20 years ago into teeming rice fields where thousands of Northern families have settled and developed the entirely new industry of upland rice farming, making lands that sold at 25 cents an acre worth \$50 to \$100 and creating populous centers of trade and commerce.

This is an Acadian settlement, and although not altogether shut off from the world, for here is a branch of the Southern Pacific, running from Alexandria to Lafayette, and in recent years a movement is in progress revealed in the growth of Ope-

lousas from a population of 2000 to 5100 in three years' time, yet in view of the wonderful fertility of the soil all about, it may be said that public ignorance of the possibilities here is profound and almost complete. Although nearly everyone who reads at all is familiar with "Evangeline," I have yet to find anyone in the North who offhand recalls that Longfellow mentions Opelousas in his much-read work, and of this land there is as little public knowledge as if Longfellow had omitted entirely from "Evangeline" these words of Father Felician:

"Beautiful is the land, with its prairies and forests of fruit trees;
Under the feet a garden of flowers, and the bluest of heavens
Bending above, and resting its dome on the walls of the forest.
They who dwell there have named it the Eden of Louisiana."

In the 140 years that have passed since the Acadians settled in Opelousas there has been tilling of the soil, planting of vines and fruit trees and raising of cattle, and universal comfort and a considerable degree of wealth have resulted. The rainfall is as certain as in any part of the country and is always sufficient to raise the ordinary crop, some years better, but never a failure complete. Rice, of course, requires to be flooded during the growing season, and even this has been done in a small way by putting down an individual artesian well, which would provide water sufficient for a small field. Small farms, with occasional large sugar plantations, numerous towns and some good-sized villages, attest the fertility of the soil and the easy, comfortable thrift that has prevailed through generations. In the villages, and even about the farmhouses, are giant live oaks, magnolias and the prodigally unbragous china tree, providing a setting picturesque and alluring, while the cape jessamine and the wild honeysuckle fill the air with sweetest perfume and the night is made melodious by the songs of myriad mocking birds.

The party of Northerners now visiting this "Eden of Louisiana" proposes a ride in carriages across a good portion of these prairies, along the line of the main irrigation canal to be built, and will then visit the canals, pumping plants, rice fields and rice mills in the Crowley district. I made the same trip three years ago next September, when the crops were ripening, and what I saw was simply a revelation. Broad prairies, broken by lines of timber skirting the bayous, stretch out on every hand. Here are vast acres of prairies in which no plowshare has ever struck; alongside are fields of corn, cotton, sugarcane, sweet potatoes, peas; in fact, almost everything that can be grown in any agricultural section of the Union. And a most remarkable feature is that the fertility of the soil seems universally uniform. There are no variations in the height and thrift of the various crops, no lean or barren places in the soil, but throughout an entire field the 'stand of cotton, corn or cane seems of almost exactly equal excellence.

All the soil is rich alluvial, from several inches to as many feet in thickness, with an almost impervious subsoil of clay—conditions quite ideal for irrigation—canal construction, as the loss of water from seepage will be inconsiderable. The character of the subsoil is demonstrated in the fact that occasional lakes and pools of water were seen even in September, and where a puddle was encountered in the roadway there was no "loblolly," such as is found where there are no hard subsoils. The great fertility of the soil and its adaptability to a wide diversity of crops distinguishes this section from almost every other part of Southwest Louisiana, or any other place, for that matter.

The fact that even after a hundred years of cultivation fertilizers are not required and that as much as a bale of cotton to the acre is produced on old land is a very remarkable feature of this section that is received with incredulity until authentic information has been given. This fine, alluvial soil is entirely free from grit, so much so that horses are seldom shod; a wagon tire after months of use looks like it had just come from the shop, and in driving all day in clouds of dust, as may be encountered in dry spells, there is no irritation of the eyelids, as would be the case if any grit were present.

While it might not be accurate to say that Mr. J. Franklin Schell is the "discoverer" of this section, yet it is undoubtedly true that to his remarkable tenacity, tireless zeal and unbounded faith is due the present assured success of the canal proposition. It is only after years of unceasing effort on his part that the irrigation enterprise is now being backed by ample capital, and it is only within the past 12 months that an era of most active railroad construction has been inaugurated in this section. For six years he has been steadily and persistently at work on the enterprise. Inspired by the wonderful development of rice culture around the Crowley section, where the lands are not so generally adapted to a wide diversification of crops, Mr. Schell saw in the situation about Opelousas an opportunity for a development on an even greater scale. To be certain on every point, he took steps to ascertain the availability and amount of the water supply afforded by every important stream throughout the parishes of St. Landry, Acadia and Calcasieu, which have an area of 750,000 acres. Soundings and measurements were made of all the larger streams in this entire section of Louisiana, so that when a final decision was made in favor of locating a pumping plant on the Bayou Cortabieu, it was with the conviction that here was to be found the only altogether desirable source of supply. This bayou gets its water supply from the Atchafalaya river, which is practically an arm of the Mississippi, and is furthermore fed by the Red, Black and Ouachita rivers. It carries a silt which gives a fertilizing quality almost equal to that of the waters of the Nile. The reading of government gauges during a long term of years demonstrated an ample supply of water in the Cortabieu. The engineering features of the proposition have been passed on and unreservedly endorsed by eminent engineers, among them Mr. Samuel M. Gray of Providence, R. I., a consulting mechanical and hydraulic engineer of national reputation. It is declared that if the generally deep-channelled Cortabieu could be pumped out there would immediately flow in from the Atchafalaya and from the Mississippi water enough to supply the drain, so that, as a matter of fact, the company has practically the resources of the Mississippi at its command.

It is the purpose of the company organized by Mr. Schell to construct a pumping plant at Washington, a few miles north of Opelousas. Here the pumping plant will be erected and will pump the water with a single lift into the canal or reservoir 400 feet wide and 2600 feet long. Rights of way have been secured for 30 miles of main canal, the right-of-way strip being 350 feet wide. Rights of way 200 feet wide have also been secured for laterals, and there are a good many additional miles of sub-laterals and ditches. Careful examinations and tests of the soil of the whole section to be irrigated have been made, and the company is thus able to accurately estimate the amount of land which it is possible for it to irrigate. Present plans

contemplate a gradual development until 500,000 acres may be served.

The route of the canal is in a north-westerly direction from Washington, along a ridge 70 feet above sea-level at the highest elevation. The surface of the country is almost uniformly level, the average slope from the canal watershed being about 11 inches to the mile, in westerly and southwesterly directions and to the north. This will make it entirely unnecessary to provide a relief pumping station, and will allow for easy and economical drainage at the harvesting season. For the first installation, canals and laterals sufficient to irrigate 25,000 acres will be constructed. This will call for the building of five miles of main canal, which will be 200 feet wide, extending from the 400-foot reservoir. It is the purpose of the company to begin work on the canal, pumping plant and rice mill by September 1, and to crowd the work through to an early completion.

It is only after obstacles that would have baffled and defeated a less determined man than Mr. Schell has brought this enterprise to a point where he declares its success is a certainty. It will cost approximately \$525,000 to build and equip the pumping plant and rice mill and construct the first main canals and 60 miles of lateral and sublateral canals. There will be a public offering of bonds, but it is stated that practically all the money necessary for the initial installation has been arranged for, bonds for that purpose having been underwritten by Lancaster, New Orleans and Opelousas people. The present plans are the result of a reorganization of the enterprise. The former company was known as the Union Rice & Irrigation Co. Through the failure of some of those relied on to furnish funds, a reorganization was found necessary, and two years ago Mr. Schell was placed in charge of all the assets of the company as trustee. This required the consent of all the 500 bond and stock holders of the old company, and it is eloquent of the confidence and faith placed in Mr. Schell that all but two of these readily gave their assent. The holdings of these two were bought out. Since taking charge Mr. Schell has worked out the reorganization without litigation, has retained every asset of the company and saved several thousand dollars in money that will go into the treasury of the new company. The Union Irrigation Co. is the title of the reorganized company. It is chartered under the laws of Louisiana, with an authorized capitalization of \$1,000,000. The present officers are: President, Leon Wolff, president Washington State Bank, Washington, La.; first vice-president, R. C. Webb, president Rayne Rice Milling Co. and president Commercial Bank, Rayne, La.; treasurer, L. E. Littell, large landowner and real-estate dealer, Opelousas, La.; assistant treasurer, John A. Haas, president St. Landry State Bank, Opelousas, La.; secretary, J. G. Lawler of Littell & Lawler, real-estate dealers, Opelousas, La. Offices of the company are at Opelousas and at Lancaster, Pa. At a meeting to be held at the Lancaster office the latter part of June there will be a number of changes in the present temporary board of directors, and some very prominent men of various localities, including Crowley, will be placed on the board. An advisory board, composed principally of Pennsylvania people, will be appointed, but the board of directors will be the executive board.

According to the terms of the financial plan, \$550,000 worth of 6 per cent. gold bonds will be offered at par. Fifty per cent. of fully-paid and non-assessable 6 per cent. cumulative preferred stock goes with the bonds sold to pay for the

first installation only, annual dividends on stock not to begin, however, till December 1, 1910. When \$250,000 has been subscribed, payments shall begin in 10 per cent. instalments, to be paid every 90 days, which will extend payments over a period of two and a half years. Local banking and trust companies are to be appointed to receive subscriptions and to hold the bonds and stock subscribed for as trustee until final payments have been made. The Interstate Trust & Banking Co. of New Orleans has been appointed as depository, and to it all collections from trustee banks are to be turned over, and are by it to be paid out for necessary machinery and construction work only on receipt of properly-drawn and attested vouchers. None of the officers of the company are to receive any salaries until 1908. It is considered that a very conservative plan is thus provided, and one that entirely safeguards the interests of those who put their money into the enterprise.

Of the party of visitors here now a number are already interested in the undertaking and others are investigating with a view to investment. The party, which came at the company's invitation, consists of Joseph Haefner, brewer and capitalist, Lancaster, Pa.; James A. Keller, tobacco-grower, Lancaster, Pa.; Henry Drachler, general contractor and builder; A. B. Hess, bank director and manufacturer of fertilizer, Lancaster, Pa.; J. A. Albert, cigar-box manufacturer, of Lancaster; Adam B. Long, lumber and coal merchant, and Nathaniel Brubaker, farmer, of Lititz, Pa.; W. G. Eaby, merchant, Bareville; Benj. W. Haines, banker, and Henry C. Baldwin, manufacturer, West Chester; James McConnell, tobacco-grower, and D. H. Buchanan, cigar manufacturer and dealer in leaf tobacco, Honeybrook; Jacob Hartz, a wealthy farmer and bank director of Morgantown, and Geo. L. Bard, capitalist and director of the Ephrata National Bank of Ephrata. In addition to this party of Pennsylvanians, there are others from New Orleans and local points, including W. B. Gregory, M.E., professor of experimental engineering, Tulane University, New Orleans, and irrigation engineer, United States Department of Agriculture, who has been sent by the government in accordance with a promise made to Mr. Schell that the government will give the enterprise the benefit of its information and investigations and will report on this project.

On the evening of the first day in Opelousas a meeting was held in the public hall of the city, where there was a large gathering of the people of Opelousas and Washington, and during the evening Mr. Schell briefly outlined the irrigation project. Maps and profiles of the canal and a map of the entire Southwestern Louisiana country were displayed on the walls, and there was printed literature for distribution. Mr. Schell stated that he had spent six years in investigating the rice question, from the selection and planting of the seed to the marketing of the product, and he felt certain that no other company in the United States possessed such detailed information regarding every feature of rice production as the Union Irrigation Co. He presented his plan as one that could hardly be so badly managed as to not pay good dividends. In Southwest Louisiana 250,000 acres are now under irrigation. Forty different irrigation companies, with 60 different plants, are engaged in this work, and all have paid handsome dividends. The Union Irrigation Co., with one management and one plant, would ultimately be in position to supply a greater area and at a much less expense. Mr. Schell had

no hesitation in recommending the proposition as one of the best and safest enterprises there is in the country today. He declared that so far from being hostile, the rice-growers in the Crowley district were co-operating in the enterprise. Because rice crops deteriorate after a number of successive years and the lands must lie fallow for a time or be put in other crops, there are 25,000 acres of rice lands in the Crowley district which must lie idle next year, so that 25,000 acres could be planted in the Opelousas district without overdoing the business. There would be co-operation between the two districts, and there would be room for the two operations. Printed statements were furnished showing the estimated profits on the company's operations, which were very handsome, and the figures were declared to be more than safe and conservative.

In addition, Mr. Schell declared it to be the company's intention to establish a model farm, on which corn, cotton, cane, strawberries and vegetables would be grown by irrigation methods alongside of such crops on unirrigated lands, and Professor Gregory gave numerous instances of the great increase in productiveness which he had seen in the cultivation of all kinds of crops by irrigation.

It is the intention to spend a number of days in this section, visiting the Crowley rice district and the Jennings oil field as well. At Crowley Dr. S. A. Knapp, the recognized authority on the rice industry, has promised to meet the party. In an official capacity Dr. Knapp has visited all the rice-growing countries of the world, and he unhesitatingly pronounces all conditions more favorable in Southwest Louisiana than in any other section. He has pointed out that to go nearer the tropics insects and pests are encountered of the most destructive kind, while also climatic conditions are unfavorable. Here the climate is not objectionable, and, most of the time, owing to the Gulf breezes, it is even more comfortable than in the latitudes farther north, and in healthfulness it is the equal of any part of the United States and free from the fevers and other ills the tropical countries have. The soil is superior to that of almost any section in versatility and fertility, water in abundance is available, so that the three essentials of agriculture—soil, water and sunshine—are here present. He declares that computations show there are three times the number of productive hours in Southwest Louisiana in a year than there are in Pennsylvania, and he has said that as an agricultural section there is no better place beneath the starry flag.

Several members of the party have visited this section before, and their enthusiastic views regarding the future possibilities here are already shared by the later visitors. One of the party declared that 100,000 people would move into this section at once if they knew with what ease and certainty all kinds of farming operations can be carried on. Farming lands may be had from \$25 to \$50 an acre and unbroken prairie at \$10 to \$25. A farm may be paid for out of two or three years' crops, while in Pennsylvania it is well-nigh the work of a lifetime to pay for a first-class farm. It was the universal sentiment that with the irrigation canal assured the whole section would see a development of the most notable sort.

I found at Opelousas a number of railroad contractors, and from them secured information about the railroad construction now going on in this section. With the canal and the railroads, there certainly is a new era on for this section, and Opelousas people would appear to be justified in entertaining rosy hopes for their

future. What is called the Opelousas, Gulf & Northwestern is under construction from Melville, La., on the Texas & Pacific, to Crowley via Opelousas and Rayne. A thousand men are at work on both ends of the line, five miles of track have been laid at the Melville end, and the contractors, Myrick Bros., state that the whole line, 60 miles in length, will be finished and cars running by the first of September. It is supposed here that this is a Gould enterprise, and that the line either will be extended to Houston or will become a link in the International & Great Northern road's reputed plans to make a Mississippi river connection.

The Colorado Southern is under construction by the Kenefick-Hammond-Quigley Construction Co. from DeQuincy, on the Kansas City Southern, to Baton Rouge. Fifty per cent. of the 136 miles is graded, tracklaying has begun at the De Quincy end, and it is expected the road will be completed by January 1. From De Quincy the road runs through Kinder, Eunice and Opelousas. B. F. Yoakum and associates are building this line. The same interests are building the Beaumont, Sour Lake & Western between Beaumont and Houston. They have trackage arrangements with the Kansas City Southern between De Quincy and Beaumont. The Colorado Southern also has a contract out for a line between Crowley and Eunice, to be done by December 31.

The Opelousas, New Orleans & Northwestern is the name of a company chartered for the purpose of securing rights of way and terminal facilities for a line between Alexandria and Opelousas. Since the Rock Island has bought the Arkansas Southern, which gives it a line from Little Rock, Ark., to Winnfield, La., there is a well-defined report that the road will be extended to Alexandria and from there to either Opelousas or Eunice. It is the purpose of the Opelousas people, in organizing the Opelousas, New Orleans & Northwestern, to provide facilities and inducements for the Rock Island to get into Opelousas. Failing in that, they will negotiate with the Santa Fe, which is presumed to be headed for New Orleans. The Grisby Construction Co. of Dallas have a contract for the construction of a line from Center, Texas, on the Gulf, Colorado & Santa Fe, to Oakdale, on the St. Louis, Walkins & Gulf road. Opelousas will endeavor to secure this line when extended east from Oakdale.

In addition to these enterprises in which Opelousas is directly interested, there are numerous other railroad lines building in this section. The Central Railroad of Louisiana is a line 247 miles long, running from Leesville, on the Kansas City Southern, to New Orleans. Dilhoff and the Myrick Construction Co. have the contract, 200 or 300 teams are at work, and it is understood the contract will be completed within a year and a half. This line will strike the Southern Pacific at Iota, between Eunice and Crowley, and proceed thence either to Rayne or Crowley, thence directly to New Iberia, thence to Donaldsonville, on the Texas & Pacific, and from there go down the river, crossing probably at Westwego. This is understood to be a Kansas City Southern enterprise.

What is called the Hayes road is under construction from Bunkie, La., to Eunice. Grading is completed between Bunkie and Ville Platte and is in progress between Ville Platte and Eunice. Track is laid between Bunkie and Eola. Mr. Hayes is a merchant of Ville Platte, a hamlet in St. Landry parish, a dozen miles or so northwest of Opelousas. It is the popular belief that this is a Gould enterprise and that it is a part of the plans to get the

Gould lines into the rice and oil fields of Southwest Louisiana and connect up the Texas and Louisiana roads in that system.

Besides these roads, the Southern Pacific is building a number of branches. A line is being built from Arnaudville, the present terminus of the Cade branch line, to a crossing with the Texas & Pacific at Palmetto, and will be extended from Palmetto to Marksville; also a contract has been let for a branch line from Lafayette to Baton Rouge. There is

much talk of a union bridge across the Mississippi at Baton Rouge, and with the report goes the prediction that it would be used by the Southern Pacific, the Colorado Southern, the Santa Fe and the Texas & Pacific.

With all these actual developments in sight, and with the expectations of still more to come, is it any wonder that people here talk of a greatness never dreamed of and an activity of the most notable kind?

ALBERT PHENIS.

ECONOMY IN LOCAL GAS-PRODUCER PLANTS.

[Written for the Manufacturers' Record.]

In rebuilding their structures destroyed by the big fire, Baltimore business men naturally gave considerable attention to the betterment of their former facilities. The officials of the Maryland Casualty Co. had this idea constantly before them while arranging for their new home. This company does considerable business throughout the country and uses a large amount of printed matter, the preparation of all of which was before the fire given to outside parties. Believing that they could print this matter more economically themselves, they decided to install a printing plant. This led to the question of providing the necessary power, and after an extensive investigation it was decided to adopt a gas-producer plant. The plant installed consists of a suction gas producer made by R. D. Wood & Co. of Philadelphia, connected to a 35-horse-power Westinghouse gas engine, which is direct connected to a 25-kilowatt three-wire direct-current Westinghouse generator. In addition to supplying power for the printing plant, it also furnishes light for the building and provides hot water for toilet purposes. Various tests made at different times demonstrated that one horse-power per hour could constantly be produced on one pound of anthracite (pea) coal. This coal is purchased for \$4.25 per ton.

Another plant which adopted gas producers for generating power was the large cotton mill erected about one year ago by Wm. E. Hooper & Sons Company of Baltimore. This plant was installed by the Power Mining & Machinery Co. of Cudahy, Wis., and consists of two 200-horse-power and two 250-horse-power American-Crossley suction gas producers connected to a 900-horse-power American-Crossley four-cylinder double-opposed horizontal engine. This plant is adapted to the use of either anthracite coal, coke or charcoal, but it is now running on anthracite pea coal and producing a brake horse-power per hour at full power on one pound of coal.

Another plant in Baltimore which is also using this method of producing power is M. Pimes & Co., manufacturers of parlor furniture, couches, etc. This company has just completed and occupied a large five-story factory building 100x150 feet, and all of the power required for operating the various woodworking machines is supplied by a plant installed by the Otto Gas Engine Works of Philadelphia. This plant consists of an Otto suction gas producer connected to a 45-horse-power Otto engine, which furnishes all the power required at a total outlay of 80 cents a day.

These illustrations of the successful production of power at a small cost naturally lead to the causes which prompted the perfection of the gas producer. Much time and study had been devoted for some years by mechanical engineers looking to the decrease in the cost of producing power, and one of the primary results attained was a radical departure from the generation of power by steam, as indicated in the gas, gasoline and fuel-oil engines.

While the use of the gas engine gradually increased, its general use was greatly retarded, because of its dependence upon two classes of fuel, one being illuminating gas, which is comparatively high in price, and the other natural gas, which is available only in certain sections of the country.

To broaden the scope of the usefulness of this type of engine it was therefore necessary to provide a fuel at a more economical cost that would take the place of illuminating and natural gases. This was accomplished by the introduction in this country of the gas-producer apparatus, which was first perfected and reached a comparatively high degree of development in Germany, England and France, where the cost of the commoner fuels are even greater than in this country. This gas-producing apparatus generated a gas that was particularly well adapted for use in the gas engine.

American manufacturers were not slow in recognizing that this solution of an important industrial problem had provided a new method of producing power which was not only practicable, but economical, and after the adoption of the fundamental principles of the European gas producer many improvements and modifications were made to it to meet existing conditions and increase its general usefulness as a power producer.

Coincident with the development of the gas producer was the stimulating effect which it had upon the gas-engine industry, and led to many improvements being made to this type of engine, all of which were induced by the broadening of its field of operation.

The average gas producer consists principally of a producer, evaporator, scrubber and receiver, and as none of these contain any moving parts, the wear and tear incident to the operation of the plant is confined to the action of the fuel on the fire-brick lining and grate-bars of the producer. These parts can easily be replaced at a small cost.

The styles of plant in most general use are the pressure type and the suction type. In the suction-type producer the air required for generating gas is drawn through the bed of the fuel in the producer, the resulting gas then being drawn through the evaporator and scrubber for the purpose of cleansing and cooling by the partial vacuum created by the piston of the gas engine. This vacuum also keeps all parts of the apparatus under a pressure less than that of the atmosphere at all times; consequently there is no odor or leakage from the plant, for if there were any imperfect joints on any part of the plant air would be drawn in instead of gas being expelled.

Among the many advantages claimed for the gas producer by its different makers are no expensive chimney, no smoke, small standby losses, slight depreciation, compactness, small amount of fuel consumed, simplicity and small average attendance.

The quality and quantity of gas which it is necessary to produce to operate a gas-engine successfully can be generated from

many different kinds of fuel, such as anthracite and bituminous coal, coke, charcoal, peat, lignite and wood. These allow a wide range for the use of that particular fuel which from the standpoint of availability and cheapness most abounds in the locality where the plant is to be installed.

From plants in active operation it has been ascertained that one horse-power per hour can be produced on from one to one-and-a-half pounds of coal, coke or charcoal, which illustrates the economy in the production of power by this method.

Although the various manufacturers of gas producers have perfected them so that they are available alike to the small and large consumer of power and equally good results obtained, yet it is to the small manufacturer that they appeal most

strongly. Heretofore the small man has been dependent to a great extent upon the large power plants, and his power has consequently been one of the largest items entering into the cost of producing his product. Today, by the installation of a plant of this character, by which he is enabled to produce power at a small cost, estimated at an average of one-third of a cent per horse-power hour, he not only becomes independent, but is also able to realize greater profits from his business.

Excellent results have also been obtained from the installation of gas-producer plants in office buildings, hotels and apartment-houses for operating elevators and lighting purposes, and experiments are now being made with a view to perfecting them for marine use.

PAPER FROM COTTON-STALK FIBER.

By HARVEY JORDAN, President Southern Cotton Association.

[Written for the Manufacturers' Record.]

The manufacture of paper from the fiber of the cotton stalk is one of the latest and most interesting inventions of the new century. For many years expert inventors have been busily engaged experimenting with the cotton stalk, and now it appears from recent developments that their labors and expenditures of money are to be rewarded with signal and striking success. Not only have these investigations passed the experimental stage, but they are rapidly being shaped to be placed into practical operation. It has been unquestionably demonstrated that all grades of paper, from the best form of linen grade to the lowest, can be manufactured from cotton stalks. In addition to this, a variety of by-products, such as alcohol, nitrogen, material for gun cotton and smokeless powder, can also be secured in paying quantities. The time is not now far distant when paper plants equipped with all modern machinery and devices for making paper and the utilization of the other by-products referred to will be built and placed in operation throughout the cotton-growing States of the South. The establishment of these mills for the manufacture of paper from cotton stalks will at once develop a new industry of quite enormous proportions and institute the utilization of a waste product which at the present time has comparatively little or no value. It will prove the entering wedge of checking the present increasing cost of paper, which is becoming such a burden upon the newspaper industry of the country.

It is estimated that on an area of land producing a bale of cotton at least one ton of stalks can be gathered. Upon this basis of calculation this new industry can annually depend upon from 10,000,000 to 12,000,000 tons of raw material. This will not only furnish necessary supplies to meet all home demands, but also permit of the export of pulp or finished products to foreign countries. At the present time there is approximately \$287,000,000 invested in paper mills in the United States, with but few plants located in the South. The bulk of the material going into the manufacture of paper at the present time is spruce pine, and which is annually becoming more expensive in the depletion of the forests and the high prices which such timber commands in the markets for other uses. The utilization of a waste product such as the cotton stalk, manufactured into commercial paper, will be a boon of inestimable value to the whole country.

The practical effect of this new invention will be to increase the present value of the South's cotton crop nearly \$100,000,000 annually. The growers will be amply paid for the expense of removing the stalks from their fields and delivery to

the paper plants, and in addition thereto receive a profit on this product of their labor. In the southwestern section of the cotton belt the new industry will especially be of value and a blessing. With the removal of the cotton stalks from the fields in the early fall the death knell of the boll-weevil will be sounded and its present devastating influences reduced to a minimum. So that from every standpoint the speedy development and extension of this new industry will be welcomed in all sections of the cotton belt. Paper manufactured from the cotton stalk is of the strongest texture and softest finish. It is reported that several plants will be erected during the next few months in certain sections of the South which will be in full operation by January 1, 1907.

OPPORTUNITIES AT BEAUMONT.

Its Industrial and Transportation Advantages.

[Special Cor. Manufacturers' Record.]

Beaumont, Texas, June 16.

Beaumont has a population of 25,000, an area three by four miles, 14 miles of paved streets, 16 miles of sewerage, 15 miles of electric line, 17 miles of gas-pipe lines, electric lights and water-works.

Beaumont is beautifully situated on the west bank of the Neches river, which has an average depth of 35 feet from the city to the mouth where it flows on to the Sabine lake and reaches the Gulf of Mexico through Sabine Pass. The government is now working on a canal which when completed will give us a depth of 25 feet of water to the Gulf. This opens up to us the markets of the world and places the Panama canal—a city of consumers—at our door and gives us access to Cuban and South American trade. The intercoastal canal has been surveyed from Donaldsonville, La., to Brownsville, Texas, connecting the Mississippi and the Rio Grande rivers, and has been recommended from Donaldsonville to the Neches river. This will give us water communication with the Mississippi river and tributary branches and opens up the interior markets of the United States at the lowest possible cost of transportation and gives us in exchange open markets for buying. Our home markets will take care of a large output of any manufactured article in common use, and with the foreign market accessible any industry can grow without limitation.

Our transportation facilities are unexcelled. We have three trunk lines entering the city, and the Frisco is now building into Beaumont. These lines each have a number of feeders leading out over various parts of the State, making our city a most excellent distributing point and giving access to non-competitive territory. The freight on raw material which we

furnish the Northern and Eastern manufacturers and the return freight on finished products would make a saving that is alluring to the progressive manufacturer.

Fuel oil can be obtained here at a minimum cost. All pipe lines lead to Beaumont, making us the permanent oil center of the Southwest. It is estimated that three barrels of oil equal one ton of coal. The oil can be obtained at an average price of 50 cents per barrel, and, taking into consideration that there is little or no expense in handling, it makes a fuel much cheaper than coal and furnishes a fire that is easily regulated and more satisfactory in every way.

The mild climate renders it unnecessary to build expensive structures, and the cost of heating a factory is entirely done away with.

Public sentiment in this section is friendly toward corporations, and our citizens will co-operate in obtaining special privileges necessary for the success of an industry. We will donate a site and take stock in any good business proposition.

Factories here have access to an inexhaustible supply of raw material at little or no cost, and that, together with our transportation facilities, cheap fuel and the advantages of our market, present opportunities for investment along industrial lines which cannot be duplicated elsewhere.

Southeast Texas is the home of the pine tree, the soil and climate being especially adapted to the development of a high-grade product. We have hardwood in abundance and gum and other soft varieties in immense quantities, easily accessible and can be obtained at a nominal cost. We are in need of factories to make wagons, agricultural implements, barrels, boxes and woodenware, crates and hardwood specialties.

An unlimited supply of sand is available a few miles above the city, convenient for loading, and can be delivered on barges at a factory site in Beaumont for about 50 cents per ton. This sand has been tested by glass companies and pronounced first-class for beer bottles, glass insulators, fruit jars, etc., for which there is a tremendous demand in Texas. Sand can also be secured from the Neches river within the city limits of Beaumont. Our citizens have offered a site of 10 acres on the river front and a stock subscription of \$15,000 as an inducement to develop the glass industry here.

There is a strong demand, which will increase from time to time, for fertilizers. We are in the center of the rice belt, and the heavy production each year will soon render it necessary to fertilize the soil in order to keep up the yield. A fertilizer factory would prove successful here.

We have an abundance of rice straw, which is either burned or goes to waste, and we understand this makes an excellent grade of paper.

We need a wholesale dry goods house. Our location would give a concern of this kind a decided advantage in the markets for 150 miles around the city. Our citizens would subscribe liberally to stock in an organization of this kind.

We need farmers to develop our agricultural resources. We have a rich soil, favorable climatic conditions and transportation facilities to grow and market the crop. We need truck farmers to supply the local markets. One hundred and thirty carloads of fresh vegetables were shipped into Beaumont last year and 12 carloads of canned vegetables, to say nothing of river shipments and broken packages. Three or four crops of vegetables can be raised each year.

J. A. ARNOLD.

Secty. Beaumont Chamber of Commerce.

THE BIRMINGHAM DISTRICT.

Interest in Preparation for Larger Iron Output.

[Special Cor. Manufacturers' Record.]
Birmingham, Ala., June 18.

There is some improvement noted in the pig-iron mart in the Birmingham district, but it is far from being what it should be and what is expected. However, considering the low ebb of production of iron, the demand is taking up all that is being manufactured right now. No little attention is being given to the preparations being made for a larger output of iron in this section. One furnace goes into blast this week, and one furnace will likely go out. The Alabama Consolidated Coal & Iron Co. will in the next day or two blow in No. 2 Ironton furnace, which has been given a thorough repairing. The Lacey-Buek furnace at Trussville will be repaired. One of the Tennessee Coal, Iron & Railroad Co.'s furnaces at Robertston, near Bessemer, will be ready for the torch shortly, and No. 5 furnace at Ensley will be completed in a few weeks. It is intended to practically rebuild furnace No. 4 when No. 5 is in blast. The Sloss-Sheffield Steel & Iron Co. will blow in its No. 2 city furnace when its stockhouse and sheds shall have been rebuilt, and the handling of raw material will be easy again. There are six furnaces under repairs in this State which will be ready for operation before the end of 90 days. It may be the latter part of the summer before the Alabama Consolidated Coal & Iron Co. will be ready to start up its new furnace at Gadsden, on account of the decision to build some new stoves to the furnace.

Many of the sales of pig-iron being made now carry with them quick delivery. Orders for iron in from 100 to 400 tons are frequent, and the statement is made that numerous requests are made to deliver just as quickly as possible. The announcement of heavy sales of basic iron in the North and West is encouraging to this district, inasmuch as foundry iron will be needed sooner or later. Quotations are holding up well. It is admitted in some quarters that iron has been sold under \$14 per ton, No. 2 foundry basis, but the location of this iron is hard to determine. The larger furnace companies in the district do not appear to be willing to sell their product under \$14 per ton, No. 2 foundry.

Buying has been on for delivery the second half of the year, but no big orders have been placed as yet in this district. Inquiries have been received for a good quantity of iron. The following quotations are still given for pig-iron: No. 1 foundry, \$14.50; No. 2 foundry, \$14; No. 3 foundry, \$13.50; No. 4 foundry, \$13; gray forge, \$12.50; No. 1 soft, \$14.50; No. 2 soft, \$14.

Conditions are very active yet in cast-iron-pipe foundries and machine-shop circles. Soil-pipe plants in this State are also just as busy as they can be, and their melt will be large for the year. The new cast-iron-pipe plant at Sheffield, Ala., will be rushed to a steady operation. The machinery will be adjusted as quickly as possible in order to secure the maximum production.

Semiofficial announcement is made that at the meetings held by the directors of the Tennessee and Republic companies in New York last week plans were agreed upon looking to the erection of another steel plant within a short distance of the Ensley plant. The company desires to increase its annual output to 600,000 tons.

The joint conference between such operators of coal mines in Alabama as deal with union labor and the United Mine Workers of America, Alabama District, No. 20, was held Monday. The report of the scale committee of the miners, which recom-

mended a renewal of the contract which has been in effect for the past three years, was submitted. Col. T. G. Bush, president of the only iron company recognizing the union miners, announced that he would meet the committee of the miners immediately to draw up a contract for the ensuing year or two years. He said that the miners were inclined to lose too much time during the month, and that opportunity was provided for losing time when in times of prosperity the miners should seek to put in time. He complained of stoppages of work when funerals were held in mining camps, and called attention to the fact that often when the mines shut down for funerals the men did not attend to the funerals. It was agreed by the miners that each local would adopt rules covering the stoppage of work, and the leaders have promised to urge their following to continue at steady work. A committee was named to visit the office of the Alabama Consolidated Coal & Iron Co. and the office of the committee of the Commercial Coal Operators' Association Tuesday and Wednesday this week and report back contracts signed to a convention to be held by the miners Thursday. It is believed that all mining companies now treating with union miners in Alabama will sign the contract, and that there will be no interruption whatsoever at any of the mines worked with union labor on July 1. The present contract is a sliding one based on the selling price of pig-iron, the average of which extends from \$8 to \$11.50 per ton, the mining wage sliding from 47½ to 57½ cents per ton. The maximum wage has been in effect for many months.

Southern Iron Situation.

[Special Dispatch to Manufacturers' Record.]
New York, June 20.

In our opinion, the general iron situation has been growing more satisfactory each week, with large orders placed and more inquiries for the last half of year from all quarters. Consumption continues to absorb all the iron made, and has prevented any accumulation on furnace yards North and South. Production has been slightly lowered already, with indications of still further reduction, while the melt by consumers seems to continue unabated. General foundrymen, pipemakers and electrical manufacturers report heavy business and excellent prospects. At the recent level of prices Southern makers have been unable to compete with Northern irons in certain localities and have secured little or no business in the last six weeks. Representatives of Southern companies here deny dissolution of Southern agreement, but admit one large order taken for last half of year under peculiar circumstances for considerably less than recent asking prices, claiming, however, that further sales on this basis highly improbable and pressure from this source unlikely. This break, while more apparent than real, may check the market here for a few days, but we believe general conditions are so satisfactory that active buying will continue and increase.

ROGERS, BROWN & Co.

[Special Dispatch to Manufacturers' Record.]
Birmingham, Ala., June 20.

While there is no official acknowledgment on the part of the Tennessee Company, it is clearly understood here that the Eastern price on iron has been reduced to \$13 per ton, and to \$13.50 in the West, whether to bring the Sloss-Sheffield Company into the agreement or not cannot be stated. But it is learned on the best authority that the Sloss-Sheffield Company did not think well of making one price for the East and another for the West. When asked for a statement, the Sloss-Sheffield Company authorized the following: "The Sloss-Sheffield Company denies the report

that it has sold or offered any iron at \$13. It has made liberal sales in the last week at prices ranging from \$13.50 to \$14. The demand for iron is good, and we see no occasion to reduce the price below \$13.50."

It is a fact that sales agents have wired to Birmingham that iron is being sold at \$13.

The *Iron Age* in its weekly review says:

"Almost like a clap of thunder from a clear sky has come the dissolution of the Southern Furnace Association, an unusually short-lived organization based upon a gentlemen's agreement among the leading Birmingham furnace companies. For months Northern furnaces have taken the greater part of what business was coming up in foundry iron, while large consumers, notably in the West, have ostentatiously withdrawn from the market again and again. The crisis was reached this week, one of the Southern makers entering the market. Just how much business was secured cannot be accurately determined, but one of the principal transactions was the sale of 10,000 tons to the International Harvester Co. on the basis of \$13 for No. 2 Birmingham, a decline of \$1 per ton below the nominal price recently quoted. Since the company named has been inquiring for more than double that amount, it looks as though the consumer is expecting further inducements before covering the entire requirements. There are reports to the effect that a cast-pipe foundry in Ohio has also taken a large tonnage.

"This break in prices cannot help but have a disquieting effect. It came at a time when in other sections the makers were showing some strength. Thus only a few days since leading Buffalo makers had sent out orders to their salesmen to advance prices 25 cents per ton. In competitive territory an adjustment of prices on foundry iron must follow, unless the tonnage which the Southern makers feel it necessary to book should be only moderate. In such competitive markets Southern iron is now freely offered at \$13.25 to \$13.50 for No. 2 foundry, Birmingham.

"It must be clearly understood that the situation is entirely different in the markets for steelmaking irons. For Bessemer pig the markets are absolutely bare, and there is not much basic immediately available. It is in the latter, however, that the changed conditions in the foundry markets may be felt to some extent."

Hardwoods at Memphis.

[Special Cor. Manufacturers' Record.]
Memphis, Tenn., June 18.

The hardwood lumber interests note an easier undertone to the lumber market, which is quite common at this time of the year, but orders are of sufficient volume to make an even-tenored business for the next 90 days. Cypress continues in strong demand, with stocks of dry cypress very much broken. Ash is active and stocks limited. Gum is in good request, both for the domestic and foreign trade, and local makers of boxes and shooks, as well as furniture, are consuming a good deal more of gum than has been consumed in years. Cottonwood promises to be in light supply this fall, and during the past 30 days has been very strong, but now, with the demands of the boxmakers relaxing as their season is ending, the situation on cottonwood may be not quite so active a one. However, at this writing high-grade cottonwood and the box grades are in good request. Quartered oak is always in more or less demand from the furniture and cabinetmaking trade, and white oak this summer meets with fair sale, but red oak is quite dull now. Hickory is scarce and high. Local building is very good in Memphis, and the retail lumbermen are finding a much larger demand than at this

period last summer, despite the fact that the retail lumber interests of Memphis have largely increased. The Memphis lumbermen, and those who have timber holdings in Tennessee, Arkansas and Mississippi, have been very much annoyed for a long time in getting their logs loaded properly and in the right season, and to rectify this trouble some of the most prominent lumbermen of the city have organized the Memphis Log Loading Co., and will look after the business through this company.

"The Old and the New Magic." By Henry Ridgely Evans. Introduction by Dr. Paul Carus. Chicago: The Open Court Publishing Co.

It is literally true that every page of this book is interesting. The author has studied his subject with persistent enthusiasm for many years, and the results of his research, study and experiment are presented in a volume of about 350 pages, well printed and profusely illustrated, besides being substantially and tastefully bound. His style is always easy and entertaining, and is frequently illumined by humor. Among a number of chapters are "History of Natural Magic and Prestidigitation," "Cagliostro: A Study in Charlatanism," "Ghost-Making Extraordinary," "The Romance of Automata," "The Secrets of Second Sight" and "The Riddle of the Sphinx." The chapter on Cagliostro is splendid, presenting in a delightfully readable form the history of that marvelous "fakir" and his truly astonishing pretensions and accomplishments. In his quest for facts relating to this wonder of magic workers Mr. Evans visited the libraries of foreign countries, besides consulting domestic collections of magical literature. His own acquaintance with some of the greatest magicians of the present and the past is also constantly displayed in his book, which abounds in anecdote. Those who hanker after a knowledge of how magic is done will have their wishes gratified by its perusal, for he fully describes and illustrates a number of the most popular and impressive feats of our stage conjurers; in fact, it may be said that he explains nearly every trick that he mentions. The performances of such masters as Houdin, Heller, Wyman, Hermann and Kellar, besides many others, are related. No doubt the book will immediately take a position in the front rank of all literature upon the art of magic.

The Blue Ridge Knitting Co. of Hagerstown, Md., has awarded contract for 120 knitting machines to be installed in the additional building reported last week as in course of construction. Mr. R. H. Morris, offices in the Arcade Building, Philadelphia, Pa., is the architect for the Blue Ridge Company, and George B. McWolf of Hagerstown is the contractor.

The honorary degree of Doctor of Science has been conferred by Union College, Schenectady, N. Y., upon Mr. C. J. H. Woodbury of Boston, long and efficient secretary of the New England Cotton Manufacturers' Association.

Col. Lawrence D. Tyson of Knoxville, Tenn., has been elected president of the Southern Soft Yarn Spinners' Association in place of Mr. J. W. Cannon of Concord, N. C., who resigned on account of the pressure of business.

The Sanford (N. C.) Chamber of Commerce has been organized with Messrs. H. M. Weller, president; C. H. Smith and L. P. Wilkins, vice-presidents; W. S. Weatherspoon, secretary, and J. W. Cunningham, treasurer.

The assessed value of the property of 48 pipe-line companies in West Virginia is \$13,181,445.

TEXTILES

The Arragon Cotton Mills.

A meeting of the stockholders of the Arragon Cotton Mills of Rock Hill, S. C., was held during the week and the directors were elected. The latter are Messrs. Alexander Long, Ira B. Dunlap, J. M. Cherry, J. G. Anderson and W. B. Wilson of Rock Hill, R. B. Hopkins of Baltimore, Md.; W. S. Lee of Charlotte, N. C., and J. E. Serrine of Greenville, S. C. Mr. Serrine is the architect in charge of construction, and Messrs. Long and Dunlap are, respectively, president and secretary. This new company was mentioned in the MANUFACTURERS' RECORD of May 17 as incorporated for the purpose of building a mill of 20,000 spindles and 600 looms, but operations will probably begin with half that equipment in position. The capital stock is \$350,000. Four-yard sheeting will be the product.

The Roxboro Enlargement.

The MANUFACTURERS' RECORD of May 24 announced that the Roxboro Cotton Mills of Roxboro, N. C., had decided to build an additional mill, to have 10,000 spindles for manufacturing yarns. The Roxboro company has since completed arrangements for the new mill, and will expend about \$200,000. Messrs. C. R. Makepeace & Co. of Providence, R. I., are the architects in charge. They will prepare plans and specifications for a main structure 130x266 feet in size, an engine and boiler house 50x100 feet, a warehouse 50x100 feet and 50 tenement cottages. Proposals for the machinery will be opened about August 1. The new plant will manufacture about 5000 pounds of 30-2 and 8-3 yarns every day. Mr. G. O. Coble is treasurer of the Roxboro Cotton Mills.

The National Cotton Mills.

Last month the MANUFACTURERS' RECORD referred to the organization of the National Cotton Mills of Lumberton, N. C., with a capital stock of \$200,000. This company has now determined to erect modern mill buildings and install an equipment of 6000 spindles for the manufacture of hosiery yarns. Contract for the machinery has been signed, but the contract for buildings has not been awarded. When completed the mill will employ about 150 operatives. Mr. R. C. Biberstein of Charlotte, N. C., is the architect-engineer in charge. The National Cotton Mills has the following officers, all previously mentioned: President, N. A. McLean; vice-president, Geo. B. McLeod; superintendent, J. W. Kaneer, and secretary-treasurer, A. P. McAllister.

The Pickens Mill Organizes.

The stockholders of the Pickens Mill of Pickens, S. C., met during the week and elected the following directors: Messrs. W. M. Hagood, E. P. Smith, J. F. Harris, F. W. Poe, J. M. Geer, D. E. Hendricks, J. P. Carey, I. M. Mauldin, T. D. Harris, E. Folger and J. D. Cloudman. They elected Mr. Hagood president and treasurer. This new company was fully reported recently by the MANUFACTURERS' RECORD, and its plans were stated to be the erection and equipment of a plant of 15,000 spindles and 450 looms for manufacturing 36-inch and 48x52 four-yard coarse sheeting; Messrs. Lockwood, Greene & Co. of Boston, Mass., and Greenville, S. C., architects in charge; capital stock \$200,000.

The Lizzie Cotton Mills Co.

The Lizzie Cotton Mills Co. of Selma, N. C., has been incorporated with an authorized capital stock of \$200,000 by Messrs. M. C. Winston, L. D. Debnam, R.

M. Nowell, J. B. Person, C. P. Haper, A. V. Driver and others. This is the incorporation of the company reported last week as being organized by M. C. Winston and associates for the purpose of building a cotton-yarn mill of 10,000 spindles. The company will at once arrange for election of officers and the selection of plans, specifications and equipment of machinery. Construction work will begin by July 2, and the contracts for machinery are expected to be awarded by July 14.

The McIntosh Mills.

The stockholders of the McIntosh Mills of Newnan, Ga., have elected temporary officers, W. C. McBride being president, and W. A. Steed, secretary-treasurer. The company proposes building a mill to be equipped with 10,000 spindles and complementary machinery for the manufacture of white, black and colored yarns. It has not made any contracts, and the management is ready to receive propositions for the textile machinery and the power plant. This enterprise was reported last week as incorporated, etc., and its common stock of \$150,000 has been subscribed. The other \$50,000, to be preferred stock, is yet to be disposed of.

The Sidney Cotton Mills.

The Sidney Cotton Mills of Graham, N. C., is now proceeding with the construction work required for its improvements referred to in March by the MANUFACTURERS' RECORD. These betterments include new buildings and new machinery as follows: Two-story 50x141-foot addition to present building and the installation of 3136 spindles, with complementary machinery, which will operate the 150 looms now in position; dyehouse 60x34 feet, now being arranged for. The company has awarded contracts for all the machinery, including a 16x42 Corliss engine and two return tubular boilers of 110 horse-power each.

The W. H. Rowe Knitting Mills.

The W. H. Rowe Knitting Co. of Huntsville, Ala., may possibly double its plant about the last of the year. It is at present operating 5200 spindles, 28 knitting machines and complementary equipment, manufacturing men's fleece-lined underwear, the daily output being 200 dozen pieces, all of which is dyed and finished ready for market. This enterprise was established by experienced New York knitted goods manufacturers, and represents at present an investment of \$150,000.

The Elizabeth Manufacturing Co.

Last week the MANUFACTURERS' RECORD mentioned the incorporation of the Elizabeth Manufacturing Co. of Mooresboro, N. C., the capital stock being placed at \$60,000. The company has since effected permanent organization, R. R. Haynes being president; S. S. Royster, vice-president, and C. M. Cook, Jr., secretary-treasurer. These officers will give consideration to the character and extent of the plant to be built.

The Crescent Mills.

In April the MANUFACTURERS' RECORD referred to the incorporation of the Crescent Mills of Bessemer City, N. C., the new company's capital stock being \$150,000. The company has elected the following officers: President, C. A. Davis; vice-president, E. D. Bullard, and secretary-treasurer, C. E. Whitney. It is to build a cotton factory, but is not yet ready to announce the details.

Dudley Lumber Co.'s Plans.

The recent report that the Dudley Lumber Co. of Granite Falls, N. C., will build a 5000-spindle cotton mill is true. The company will engage an architect and en-

gineer in the near future, but does not expect to begin the construction of the plant before next spring. The mill is to be operated by electricity transmitted from water-power development, and No. 50 yarn will be the product.

For Textile Manufacturing.

The Pink Manufacturing Co. of Lattimore, N. C., has been incorporated with capital stock of \$50,000 for textile-manufacturing purposes, details of which have not been announced. The incorporators are Messrs. J. L. Stroup and W. T. Calton of Lattimore, N. C.; J. P. Dillinger and George D. Huss of Cherryville, N. C., and W. Y. Crowder of Shelby, N. C.

To Enlarge Weldon Plant.

The Weldon Cotton Manufacturing Co. of Weldon, N. C., expects to add 1500 frame spindles to its knitting plant. This company operates a knitting plant of 20 knitting machines, 2016 mule spindles, etc., employing 125 operatives in the production of 200 dozen pieces of men's underwear every day. The mill spins cotton which is dyed in the bale.

The Melville Manufacturing Co.

The Melville Manufacturing Co. of Cherryville, N. C., has been incorporated with a capital stock of \$125,000 for the purpose of manufacturing cotton goods, but no details have been announced as to the plant. Messrs. J. S. P. Carpenter, M. L. Rudisill and others are the incorporators.

Contemplates Additional Mill.

The Knoxville Knitting Mills Co. of Knoxville, Tenn., expects to build a new mill and double its present capacity, which is 600 dozen pairs of knit hose and 300 dozen pairs of embroidered hose. This product is dyed and finished at the mill. The company is a \$50,000 enterprise.

Textile Notes.

The Texas Woolen Co. of Dallas, Texas, has been incorporated with capital stock of \$25,000 by W. W. Graham, S. Gray and J. O. Stange.

It is reported that the Walterboro (S. C.) Cotton Mills, now operating 6500 spindles and 275 looms, will increase equipment to 10,000 spindles.

Reports state that it is proposed to form company for the purpose of building a cotton mill at McDonough, Ga., and E. M. Copeland is said to be interested in the enterprise.

The Burlington Hosiery Mills of Burlington, N. C., is now placing contracts to double its present equipment, which is 42 machines, etc. The company will also install a dyeing and finishing plant.

The Elite Embroidery Manufacturing Co. of St. Louis, Mo., has been incorporated with a capital stock of \$5000 for manufacturing laces and embroidery by Messrs. E. A. Ellerman, John Hagen and others.

The Roanoke (Va.) Knitting Mills Co. is preparing to dye its own goods and to add 50 knitting machines. It is at present operating 150 knitting machines and the usual complement of sewers, power plant, etc. Daily capacity is 500 dozen pairs of hose.

Committees have been appointed to promote the organization of the \$1,000,000 company recently noted as proposed at Washington, Ga. This company's purpose will be to build a cotton factory for operation by the electric power to be distributed by the Anthony Shoals Power Co., which is now arranging to develop water-power. Messrs. W. T. Johnson, J. M. Pitter, F. H. Colley, W. A. Slaton and others are interested.

LUMBER

[A complete record of new mills and building operations in the South will be found in the Construction Department.]

Building at Birmingham.

About 300 buildings are now in course of construction in the Birmingham district, the estimated cost of the new work being \$3,500,000. The most pretentious building is the 15-story structure at the corner of 20th street and First avenue, in Birmingham proper. Other prominent buildings in this section are the Brown-Marx building, Goodall-Brown building and the Moore & Handley building, each to cost about \$75,000, and the Doster-Northington building, to cost about \$30,000. The Sinnige building will cost about \$25,000; the building of S. F. Teague & Co., \$20,000; a building for Collins & Co., \$20,000, and the Majestic Theater, about \$40,000. Beside a number of other improvements in this immediate section, the Barnett-Sheppard Lumber Co. is erecting a factory building and making other improvements to cost about \$100,000. In the Highland district J. W. Donnelly is erecting a dwelling to cost \$20,000, Eugene Enslen one to cost \$25,000 and E. Solomon and A. B. Loveman one each to cost about \$15,000. Other dwellings are being erected for S. E. Thompson and F. Caheen. Apartment-houses for W. H. Chenoweth and J. H. Scruggs will cost approximately \$75,000 and \$20,000 respectively. Other sections in which building is very active include East Lake, Norwood, North Birmingham, West End, Avondale, Woodlawn, Lakeview and Fountain Heights.

Large Milling Properties Acquired.

Reports from New Orleans, La., announce that Messrs. W. J. Joyce, D. J. Batchelder and S. J. Carpenter have acquired the timber holdings and mill equipment of the Tremont Lumber Co., South Arkansas Lumber Co. and the Winn Parish Lumber Co., consisting of about 160,000 acres of virgin timber, together with four mills in Winn, Jackson and Lincoln parishes, in the northern part of Louisiana. An additional mill of large capacity is contemplated. The Tremont & Gulf Railroad has also been purchased, and will be extended, it is stated, 16 miles north from Tremont to Farmersville, connecting with the Missouri Pacific line. At present this railroad runs from Tremont to a point below Eros, from which terminus an extension will be constructed to Winn, a distance of about 24 miles. It is understood that the transaction involved an outlay of about \$5,000,000. Officers of the new company are Messrs. W. J. Joyce, president; D. J. Batchelder, vice-president; S. J. Carpenter, treasurer, and Robert H. Jenks, secretary.

Option on Pine Timber.

Dispatches from Thomasville, Ga., state that Messrs. Ralph, Derr & Co. of New York city have secured an option on 5000 acres of pine timber from the Thomas County Lumber Co. It is understood that the option is for 30 days, and if the deal is closed will involve a consideration of \$132,500. The purchase does not include the turpentine right or the land, but embraces a turpentine still and saw-mill now located on the property.

Florida Timber-Land Purchase.

A large tract of timber land in Polk county, Florida, has been sold through Messrs. Sample & Ramp of Bartow, Fla., to Pennsylvania lumber manufacturers. The purchasers are understood to have in view the erection of mills for cutting the timber. They include Messrs. J. A. Knight, H. C. Hower and John S. Shirk

of Lewistown, Pa., and H. J. Shallenberger of McAllisterville, Pa.

Southern Cypress Manufacturers.

At a special meeting of the Southern Cypress Manufacturers' Association at Atlanta, Ga., last week several matters of interest were discussed. The question of establishing a uniform method of grading was considered, as was also the matter of abolishing by legislation the present import duty which Cuba levies on shipments of cypress from this country.

Wants 450,000 feet of Maple.

A manufacturing company located in the South wants 450,000 feet of maple timber 4½ inches thick, log run width and log run length. Correspondence may be addressed to No. 700, care of MANUFACTURERS' RECORD.

Wants Veneer.

The Piedmont Buggy Co. of Monroe, N. C., desires to correspond with operators of veneer mills with a view to securing their product.

It is announced that from 50 to 100 hardwood manufacturers in that section will meet at Meridian, Miss., on June 25.

FOREIGN LETTERS

The MANUFACTURERS' RECORD is so widely read in foreign countries that we are in constant receipt of many letters from all parts of the world. Some of these letters indicate the disposition of foreigners to buy American goods, and are therefore of interest to our readers.

Replacing English Cotton Ties.

Mr. H. L. Van Tress, importer and exporter, Torreon, Coahuila, Mexico:

"The principal trade I expect to have in this immediate vicinity will be with the cotton planters and ginners, to whom I am already selling quite extensively Carnegie Steel Co.'s cotton ties, replacing English ties, which have been used here almost exclusively since cotton was first planted here. I am desirous of selling the planters of this section selected cottonseed for planting, which is being brought in during the past few years quite extensively. I am at present in correspondence with a friend who is with the Lummus Gin Co. in South Carolina, and expect to make a trip up that way before the next cotton-planting season."

Wants Manufactures for Austria.

Oscar Karsten, Vienna, Austria:

"I am interested in manufactured goods, and if you had the kindness to name me a few first-class chemical manufacturing firms of the inner States making ethers and amyl acetate, soluble cotton, etc., I should be very much obliged to you."

Information on Crematories.

S. S. Harvey, Prado 99, Havana, Cuba: "We want information about crematories—cost of plant, cost of operation, etc."

Georgia Cottonseed Crushers.

The program of this week's meeting of the Cottonseed Crushers' Association of Georgia at Lithia Springs included addresses by Dr. John M. McCandless on the chemistry of cotton and its seed, by Prof. C. L. Willoughby on feeding cottonseed products to farm animals, by O. K. Kelks on feeding cottonseed meal to hogs, by C. D. Jordan on cottonseed feed meal, by J. A. Aycock on the uses of cottonseed oil, by J. A. Aycock on the province of the publicity bureau, by W. E. McCaw on the avoidance of reclamations, by Fielding Wallace on the tariff on press cloth, and by C. M. King on cottonseed meal as a human food.

MINING

Developing Kentucky Coal Lands.

The Marrow Coal & Coke Co. of Lookout, Ky., recently incorporated, has a capital stock of \$125,000 and will develop 1100 acres of coal lands on Marrowbone creek. This property is under lease from the Big Sandy Company, and both the lower and upper coal seams are being opened by drift mining, operated by an incline using monitors. When completed the plant will have a capacity of 1000 tons per day. Contracts for all construction work and supplies have been let, and plans are partially made for a central electric plant to supply power to the various operations on the creek. The company does not contemplate the construction of coke ovens at this time, but will probably erect 100 ovens later. Shipments of coal are expected to begin about September 1. The cost of the mining plant, exclusive of the power, will be about \$35,000. Officers of the company are Messrs. John F. McCracken, Lookout, Ky., president; J. M. Diefenbaugh, vice-president; F. N. Conn, Masontown, Pa., secretary; D. R. Anderson, treasurer, and R. C. Peacock, Camden, N. J., general manager and consulting engineer. This is one of the companies referred to last week in special correspondence to the MANUFACTURERS' RECORD from Boston, Mass., as preparing to develop coal property under a lease from the Big Sandy Company of that city.

Development of Fuller's Earth.

The Somerville Development & Improvement Co. of Somerville, Texas, reference to which was made in this column last week, will erect a plant to facilitate development of deposits of fuller's earth. The property is located near Somerville, and the plant will have a capacity of about 50 tons of clean earth per day. Beside power equipment, consisting of engines and boilers, the company will require special machinery for use in drying the clay as it comes from the mine, and before going to the crushers. This equipment will probably consist of cylindrical revolving dryers. There will also be required bolting and hoisting machinery and fans, in addition to several hundred feet of tram railway material. Among the buildings to be erected will be a power plant, warehouse to be equipped with curing and seasoning rooms, office and chemical laboratory, etc., the buildings and equipment to cost about \$50,000. It is expected to have the plant ready for operation in five months. No mechanical engineer has as yet been selected for the construction work, but N. W. Dunham is the managing officer in charge.

Copper Mining in North Carolina.

Mr. A. Monteith A. Richardson, 80 Broadway, New York, in a letter to the MANUFACTURERS' RECORD referring to development work which is now being done on the Gold Hill property, North Carolina, says:

"The Gold Hill and Union mines in Rowan county, North Carolina, have lots of good copper sulphide ore, but the machinery they have down to get results from this ore never was the correct machinery. Hence the black eye the property has got. * * * Within the last two or three weeks we have cut into some very rich veins at the 800-foot level bearing gold, and I have just received a wire from there saying '216 ounces malgum, netting 72 ounces pure gold, in 24 hours' run and 10 stamps; started 30 stamps on same kind of ore at 7 this morning.' * * * However, we are not talking Gold Hill as a gold proposition. We are talking on it as a copper proposition, because we have millions of tons of copper. If we happen

to run into rich gold-bearing veins, so much the better."

To Develop Lignite Deposits.

The Beargrass Coal Co. of Hillsboro, Texas, has been incorporated for the purpose of developing lignite deposits in Leon county. The company owns about 1600 acres of land containing the deposits, which are said to be from 8 to 14 feet in thickness, and expects to begin operations as soon as practicable, producing 1000 tons per day, which capacity will be increased as the demand warrants it. Machinery will be required for running the plant, but details as to this have not as yet been determined. Officers of the company are Messrs. A. J. Jasper, Hillsboro, president; W. G. Bartels, Carlisle, Ill., vice-president and general manager, and S. C. Dyer, Hillsboro, secretary and treasurer. Mr. W. E. Speel of Hillsboro is the attorney for the company.

Lead and Zinc Developments.

Reports from Memphis state that the Powhatan Zinc & Lead Mining Co. has been incorporated with a capital stock of \$1,000,000, and development work has already begun. It is stated that two mines in the northwestern part of Arkansas have been opened and locations found for about 30 more. The company is planning to erect a mill of 200 tons capacity to begin operations within a short time. Officers of the Powhatan Zinc & Lead Mining Co. are Messrs. S. M. Neely of Memphis, Tenn., president; B. J. Campbell, Memphis, vice-president and treasurer, and Thomas E. Peters of Black Rock, Ark., secretary and general manager. This company was recently referred to.

The Miners' Coal Co. of Charleston, W. Va., has been incorporated with an authorized capital stock of \$100,000 for the purpose of mining coal, manufacturing coke, etc. Incorporators of the company are Messrs. J. H. Shrewsbury, Charles B. Daum, William B. Stevens and Howard Donnelly, all of Charleston, and H. Lyons Smith of Washington, D. C.

To Adopt Iron Bridges.

Bridge builders will be interested in the announcement that it is probable Craven county, North Carolina, will soon adopt iron bridges for its territory, replacing the wooden structures which have been used in the past. At present the county is having plans and specifications prepared for the construction of a bridge across the Neuse river, this being the beginning of iron-bridge construction in Craven county. Mr. C. E. Foy, chairman of the board of county commissioners, believes that within the next several years iron bridges will be adopted all over the county. He is located at Newbern, N. C.

For a City Engineer.

The city of Orangeburg, S. C., announces that applications for the position for one year of engineer for the construction of its proposed sewerage system, for which \$50,000 is available, will be received until July 6. For full particulars address L. H. Wannamaker, treasurer of Orangeburg.

C. W. Jungen, general manager of the Atlantic lines of the Southern Pacific Steamship Co., is reported as saying that the company expects to have three new passenger steamers completed by the middle of December for service between New Orleans and New York. The first will be delivered by the builders about October 1. The company also will put on four new freight steamers between Galveston and New York. They will be refrigerator vessels of greater capacity than the steamers now running between those ports, which are of 3000 tons.

80
825
825
825

825
825
825
826

827

827

827

827

827

828

828

828

829

837

839

839

839

840

840

840

841

841

841

841

841

841

841

841

841

841

841

841

842

842

842

842

842

842

842

842

842

842

843

843

843

843

843

843

843

843

843

843

843

843

843

843

843

843

844

847

850

851

852

852

854

855

855

855

855

856

856

856

856

856

856

856

856

856

856

856

856

856

856

856

856

856

856

856

been
W.
W.
orris
l, l.
yde-
kla-

See